

# Working Paper Series

WP 08-7

AUGUST 2008

## Policy Liberalization and FDI Growth, 1982 to 2006

Matthew Adler and Gary Clyde Hufbauer

### Abstract

Over the last three decades the global economy has expanded in a remarkable fashion. While nominal world GDP has increased four times, world bilateral trade flows have grown more than six-fold, and the stock of foreign direct investment (FDI) has grown by roughly 20 times since 1980. The sources of global trade and investment growth are well known—general economic expansion, policy liberalization, and better communications and technology—but the impact of each source is unclear. In this paper we attempt to uncover the contribution of policy liberalization to the rising ratios of US inward and outward FDI stocks to GDP over the last three decades.

The role of policy liberalization in fostering FDI expansion since the 1980s is murky. Policies related to FDI have undoubtedly been liberalized since the 1980s, but the changes are not easily quantified, making an assessment of their impact on FDI difficult. To get around this obstacle, we rely on stylized facts about US inward and outward FDI stocks and an unorthodox calculation method to approximate the role of policy liberalization on FDI growth.

**JEL Codes:** F13, F21, F23, F29

**Keywords:** Foreign direct investment, Policy liberalization, International economic integration

**Gary Clyde Hufbauer** is the Reginald Jones Senior Fellow at the Peterson Institute for International Economics. **Matthew Adler** is a research assistant at the Peterson Institute. The authors thank Steven Globerman, Theodore Moran, and Karl Sauvart for helpful suggestions. The authors would also like to thank Madona Devasahayam, Helen Hillebrand, and Susann Luetjen for preparing this manuscript for publication. Larry Summers suggested the core idea that inspired this paper: trying to distinguish the impact of policy liberalization from the effects of technology in promoting the growth of trade and foreign direct investment. The authors also thank the Sloan Foundation for its support of a study on globalization and US competitiveness. Their work on FDI is a small part of this larger work.

*Copyright © 2008 by the Peterson Institute for International Economics. All rights reserved. No part of this working paper may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, recording, or by information storage or retrieval system, without permission from the Institute.*

Foreign direct investment (FDI), both into and out of the United States, has boomed over the last two and half decades. A certain pace of FDI growth is not surprising, since countries grow wealthier over time and all investment stocks expand.<sup>1</sup> Yet the growth of US FDI stocks, both inward and outward, substantially exceeds this “expected” rate of growth. Over the 25-year period, between 1982 and 2006, US nominal GDP roughly quadrupled and US two-way merchandise trade increased more than six-fold in nominal terms.<sup>2</sup> These are large increases, but they pale in comparison to the eleven-fold increase in US outward FDI stock and the fourteen-fold increase in US inward FDI stock (see figures 1 and 2).

What explains this FDI boom? Conceptually it can be attributed to three broadly defined factors: expansion of the economy, as mentioned; policy liberalization; and everything else, a combination of market forces (especially the application of firm-specific advantages on a global scale) and technological change (notably better communications and transportation). The first factor, economic expansion, is roughly captured by GDP growth in the United States and abroad, allowing us to narrow our inquiry into the rising ratio of FDI stocks to GDP. We are primarily concerned with policy liberalization and its role in raising the ratio of FDI to GDP; once we make a rough accounting of the policy liberalization component, what’s left goes into the “everything else” or “market forces plus technology” basket.

Figuring out the role of policy liberalization in FDI expansion has become increasingly important. Marchick and Slaughter (2008) outline a growing protectionist sentiment toward FDI—headlined in the United States by the Dubai Ports World and Unocal/CNOOC debates. If the role of policy liberalization in FDI growth over the last 25 years has been limited, then a reversion to mild protectionism would not be so worrisome. But the simple calculations in this paper suggest that policy liberalization has been an important driver of the FDI boom and that, by implication, growing protectionism around the world is worrisome.

In the next section we survey the relevant empirical literature on the role of policy liberalization in sparking FDI growth. We then present data, at the industry level and by destination, on US inward and outward FDI stocks from 1982 to 2006.<sup>3</sup> Next, we make a series of judgments to assess the role of policy liberalization in augmenting direct investment. As its corollary, our approach attributes to market forces and technological change the residual or unexplained rise in the ratio between FDI stocks and GDP levels. Finally, we attempt to quantify the economic benefit of increased FDI stocks spurred by policy liberalization.

---

1. The US stock of fixed assets (valued in terms of historical acquisition cost) relative to nominal GDP was 3.6 in 1982. The ratio dipped to about 3.0 in the late 1990s but rose to roughly 3.4 in 2006 (Bureau of Economic Analysis).

2. Statistics are from UN COMTRADE database, International Monetary Fund, and Bureau of Economic Analysis.

3. Our “by destination” data concern only US outward FDI stocks.

## LITERATURE REVIEW

Out of the vast literature on the determinants of FDI, we focus on policy liberalization—measures such as the removal of explicit FDI restrictions, relaxation of capital controls, reduced tariff and nontariff barriers, and lower corporate taxes. Blonigen (2005) provides an extensive review of the impact of policy liberalization on FDI as well as other FDI determinants not discussed here. His central finding is that the literature still leaves a great deal to be explained. In his words, “the empirical literature...is still young enough that most hypotheses are still up for grabs” (Blonigen 2005).

Most of the relevant literature takes a historical approach, analyzing past episodes of policy liberalization, both over time and across countries. Since the FDI policies of OECD countries (including the United States) are relatively nonrestrictive, empirical work has focused on policy changes in developing countries. Nicoletti et al. (2003) is an exception. The model designed by these authors enables them to forecast the effect of policy liberalization on FDI into the United States. They estimate that, if the United States adopted the same low level of FDI restrictions prevailing in the United Kingdom—including screening requirements, foreign shareholding requirements, nationality of management, and visa limitations—the inward FDI stock in the United States would increase by approximately 20 percent.<sup>4</sup>

The Nicoletti et al. study also speculates on the effect of completely removing individual FDI restrictions. The authors calculate that the average inward FDI stocks of OECD countries would have risen roughly 80 percent above observed levels, over the period 1980 to 2000, if foreign equity ceilings had been completely abolished. Other findings: If national interest tests were completely ignored, average OECD inward FDI stocks would have been 20 percent higher over the period, and if nationality requirements on management were relaxed, average OECD inward FDI stocks would have increased by roughly 10 percent over the period.

An older but still relevant study by Hultman and McGee (1989) examined foreign bank activity in the United States from 1973 to 1986 and found that inward banking growth was directly related to the International Banking Act of 1978, which leveled the playing field between foreign and US-owned banks.

Shapiro and Globerman (2003) investigated the impact of several policy shifts on inward and outward FDI in the Canadian manufacturing, finance, and energy sectors. Their study indirectly speaks to the US response since the bulk of Canadian direct investment in both directions occurs with the United States. In the manufacturing sector, both the US-Canada Auto Pact and the North American Free Trade Agreement (NAFTA) were found to positively impact Canadian inflows and outflows of FDI; however, the results were not robust to all specifications. The Canadian Foreign Investment Review Act (1974

---

4. The analysis in Nicoletti et al. (2003) uses 1998 inward FDI stocks as the base level. The forecast applies the same FDI restrictiveness indicator found for the United Kingdom to the United States and other OECD countries.

to 1985), which applied a “significant benefit” threshold on new foreign investments and acquisitions, was found to negatively impact FDI inflows and outflows, but again the results were not robust to all specifications. In finance, the so-called little bang (enacted in 1987), which relaxed barriers protecting the Canadian securities markets, was found to have a positive impact on FDI inflows in the financial sector. A restrictive Canadian policy known as the National Energy Program (1980 to 1985), which limited foreign ownership in Canadian oil and gas industries, was associated with fewer FDI inflows into the energy sector. NAFTA was surprisingly found to have a negative impact on inward Canadian FDI but a positive impact on outward Canadian FDI in the finance sector.<sup>5</sup> In the energy sector, NAFTA had no impact on FDI inflows but a positive impact on FDI outflows.

Loree and Guisinger (1995) find predictable results when they look at the effect of developing-country investment incentives, performance requirements, and tax rates on attracting US outward FDI. Investment incentives (subsidies as well as tax and tariff concessions) were found to attract US outward FDI. Performance requirements, which encompass export and import obligations, and local input or labor requirements, were found to decrease US outward FDI. The authors also found that high host-country corporate tax rates are associated with less US outward FDI.

Gastanaga, Nugent, and Pashamova (1998) examined FDI flows into developing countries from many countries, not only from the United States, and found a similar negative impact of corporate taxes on FDI, but only when tax rates exceeded 20 percent. Additionally, that study evaluated an index of the degree of openness of developing countries to international capital as an explanatory variable for FDI flows. Host-country liberalization of financial restrictions was associated with larger FDI inflows. These results coincide with the work of Asiedu and Gyimah-Brempong (2007), who also use an FDI restrictiveness index. Their data are more recent and focus exclusively on US outward FDI flows to Africa.<sup>6</sup>

Several studies take a detailed look at the impact of capital controls on FDI. Asiedu and Lien (2004) analyze three types of capital controls—capital account restrictions, exchange rate distortions, and controls to ensure the repatriation of export proceeds—in the 1970s, 1980s, and 1990s, across 96 developing countries. In the most recent period (1990 to 2000), they find that removing controls on the repatriation of export proceeds would have increased annual FDI inflows (into developing countries) as a share of GDP by slightly more than 1 percent; capital account liberalization would have about the same effect; and a unitary exchange rate would increase the ratio by about a half percent (Asiedu and Lien

---

5. The negative NAFTA impact on inward FDI might have reflected some unwinding of prior “barrier-jumping” investment from the United States into Canada.

6. In both Gastanaga, Nugent, and Pashamova (1998) and Asiedu and Gyimah-Brempong (2007), annual FDI inflows as a ratio to GDP are used as the dependent variable. Loree and Guisinger (1995) use the absolute level of annual FDI inflows from the United States as the dependent variable.

2004).<sup>7</sup> However, these are average coefficients, and the authors find a range of results depending on the region. For example, in East Asia the estimated effect of capital account liberalization was an increase of roughly 4 percent in FDI inflows as a share of GDP, while the impact of capital account liberalization was not significant in Latin America or the Middle East and North Africa (MENA). In fact, none of the estimated impacts from policy liberalization are statistically significant for MENA. In Latin America, however, both a unitary exchange rate and a liberalization of repatriation policy would have increased the annual ratio of FDI flows to GDP by about 1 percent over the period. A figure of 1 percent sounds small, but cumulated over 20 years, it could mean an increase in the stock of inward FDI, relative to GDP, of 20 percentage points.

Desai, Foley, and Hines (2006) also investigate the impact of capital control liberalization on FDI. The authors look exclusively at the foreign activities of US multinational firms from 1982 to 1997. They find that US multinational firm assets grew about 8 percent faster in the years following capital control liberalizations.<sup>8</sup>

De Mooij and Ederveen (2005) carried out a “meta-analysis” of several empirical works on the tax elasticity of FDI.<sup>9</sup> The authors consider four types of empirical techniques: cross-sectional analysis, time-series analysis, discrete-choice models, and panel-data analysis. On average, negative elasticities are found for all four types, indicating that a reduction in corporate taxes increases FDI flows. De Mooij and Ederveen (2005) then remove the outlying observations, leaving 427 elasticity estimates across the four empirical techniques. After averaging the estimates of each category the authors find a semi-elasticity for the response of FDI to taxation of  $-3.72$ , suggesting that, *ceteris paribus*, a one-percentage point tax rate reduction (e.g., lowering a 25 percent corporate tax rate to a 24 percent corporate tax rate) would lead to a 3.72 percent increase in annual FDI flows. This, of course, is just an average estimate; actual responses will obviously vary between countries. However, for our discussion, the negative sign of the elasticity is important. Table 1 shows corporate tax rates of several developed countries in 1982, 1987, 1992, 1999, and 2005; the general downward trend is evident. Combined with a negative tax elasticity of FDI, the tax rate reductions explain some of the growth of FDI stocks over the last 25 years.

---

7. The results for the 1970s and 1980s also show positive relationships between policy liberalization and FDI flows, but the results lack significance (Asiedu and Lien 2004).

8. Two earlier studies, Carlson and Hernandez (2002) and Montiel and Reinhart (1999), found that capital controls were actually associated with more FDI. In defense of this outcome, the authors suggest that capital controls are instrumental in altering the composition of capital attracted by a country, bringing more FDI in place of short-term debt but not changing the overall amount of capital very much.

9. De Mooij and Ederveen (2005) focus on the impact on FDI of *percentage point* changes in tax rates—i.e., semi-elasticities—rather than simple elasticities. A simple elasticity would show the FDI response to a 1-percent cut in tax rates—e.g., lowering a 20 percent corporate tax rate to 19.8 percent. Since we normally think of tax rates in percentage point terms, De Mooij and Ederveen (2005) prefer the expression in semi-elasticity terms.

Applying simple-minded arithmetic, we can quantify the impact that corporate tax rate cuts might have on FDI into the 18 countries listed in table 1. This is done by applying an average of national tax rate cuts to the  $-3.72$  semi-elasticity estimate from De Mooij and Ederveen (2005). Following this approach, table 2 shows two ways to quantify the impact of corporate rate cuts on FDI. We discuss only the more conservative estimate here, leaving detailed discussion of the calculation method used in table 2, as well as the bolder approach, to box 1. The conservative calculation proceeds as follows. We assume that corporate tax cuts boost FDI flows for about 5 years and then the stimulus dwindles away to zero. Therefore we divide our sample into successive 5-year periods. For each period, we calculate the impact of the average tax rate cut (across years and countries) on FDI inflows experienced by the 18 countries listed in table 1.<sup>10</sup> We then sum up the impacts calculated for each 5-year period to estimate the total impact. Using this method, we estimate the impact of corporate tax rate cuts to be \$315 billion or roughly 5 percent of the total growth in inward FDI stocks for the 18 countries over the period. Box 1 provides further explanation.

Ferrantino and Hall (2001) develop a model to examine the direct impact of trade liberalization on FDI. Specifically, the authors investigate the removal of bilateral tariffs between the United States and the United Kingdom under two scenarios. In the first scenario, they just remove the tariffs between the two countries; in the second scenario, they not only eliminate bilateral tariffs but also force the United Kingdom to abandon its preferential tariff status with the rest of the European Union. Their analysis indicates that trade liberalization, due mostly to cheaper imports, generally increases FDI. However, for some industries in the second scenario, the loss of an export platform in the United Kingdom for shipments to the European Union negatively impacts FDI, despite the positive effect of tariff liberalization between the United States and United Kingdom (Ferrantino and Hall 2001).

Goldar and Banga (2007) find similarly nuanced results when looking at FDI into India from 1991 to 1998 but again reach the general conclusion that trade liberalization positively impacts FDI. Blonigen (2002) takes an interesting approach to the trade barrier question by looking at antidumping duties. Conventional wisdom suggests that, when faced with large antidumping duties, multinational firms will respond by increasing FDI placed in a newly blocked market—a form of tariff jumping. Blonigen (2002) finds a contrary result and suggests that tariff jumping is only an option for a select few firms from developed countries.

Hufbauer and Schott (2007) apply a gravity model to inward FDI stocks and find limited support for the tariff-jumping theory. Their model, which includes dummy variables for major free trade

---

10. This approach is intended to reflect the possibility that the high estimated response of FDI to lower corporate taxes (a coefficient of  $-3.72$ ) may reflect investment diversion, which is subsequently arrested when a competing country cuts its own corporate tax rate.

### Box 1 Extending De Mooij and Ederveen (2005)

In table 2 we quantify the impact of tax cuts on the combined inward FDI stock of 18 countries (listed in table 1) between 1982 and 2005. The methodology for table 2 is simple: We combine the semi-elasticity reported by De Mooij and Ederveen (2005) from their meta-analysis, namely  $-3.72$ , with the average cumulated tax rate cuts. The result is an estimate of what FDI inflows would have been in a given period without the tax cuts—i.e., the hypothetical level of FDI inflows. We then take the sum of differences between observed FDI inflows and hypothetical FDI inflows to estimate the impact of tax cuts on the combined inward FDI stock of the 18 countries between 1982 and 2005. Mathematically, our calculations can be expressed as follows:

$$FDI_{hypo} * (1 + (-3.72) * \Delta Taxes) = FDI_{lin} \quad (1)$$

$$FDI_{hypo} = \frac{FDI_{lin}}{(1 + (-3.72) * \Delta Taxes)} \quad (2)$$

$$\sum_{1982}^{2005} (FDI_{lin} - FDI_{hypo}) = \Delta FDI_{stock} \quad (3)$$

In these equations,  $FDI_{hypo}$  is the predicted amount of FDI inflows that would have occurred due to changes in corporate tax rates;  $FDI_{lin}$  is the observed amount of FDI inflows;  $\Delta Taxes$  is the average corporate tax rate change for the 18 countries listed in table 1; and  $\Delta FDI_{stock}$  is the total change in the observed inward FDI stock of the 18 countries attributable to corporate tax changes between 1982 and 2005.

We conduct the calculation in two alternative ways. The first method almost certainly generates an upper-bound estimate of the inward FDI stock change resulting from lower corporate tax rates. In this method, we start with the year-by-year change in the weighted average statutory corporate tax rate in the 18 countries (table 1). We then assume that a tax cut in any year (say, 1981) continues to expand OECD FDI flows for the entire subsequent period (i.e., 1981 to 2005). The result is an estimated impact of roughly \$1,800 billion. This is roughly 32 percent of the observed total growth in inward FDI stocks in the 18 countries. However, the calculations in table 9 suggest that 77 percent of growth in inward US FDI stock reflects forces other than simple US GDP growth. It seems unlikely that lower US corporate tax rates can explain nearly half of this “residual” expansion.

The second method, which we discuss in the main text, uses the average statutory corporate tax rate cuts of the 18 countries, for each of the 5-year periods. Total FDI flows for the full 5-year periods are used in this method. However, unlike the first method, we assume that the benefit of the tax cut only affects FDI flows in each 5-year period. Applied to US experience, the estimate from the 5-year analysis seems more plausible, especially in light of a related consideration. The meta-analysis semi-elasticity of  $-3.72$  likely captures a good deal of change in relative corporate tax rates between competing destinations (e.g., inward US FDI versus inward Canadian FDI). When first one country then another reduces its corporate tax rate, there is probably some expansion of total FDI flows, but there is also considerable switching between FDI destinations. Hence a transitory impact calculation, such as our 5-year approach, seems more appropriate.

agreements (FTAs) and customs unions, finds that the Canada-US FTA decreased bilateral FDI stocks between the two countries.<sup>11</sup> This result can be cited in support of the tariff-jumping hypothesis in the sense that the Canada-US FTA perhaps led to an unwinding of investment that was earlier spurred by tariff barriers. However, the Canada-US FTA finding runs contrary to most other FTA results. For example, applying the same gravity model, the European Union is found to have increased FDI stocks between member countries over the length of the sample period, 1976 to 2005. Mercosur and the Association of Southeast Asian Nations (ASEAN) FTA (AFTA) were also found to increase FDI stocks between their members (Hufbauer and Schott 2007).

Leshner and Miroudot (2007) investigate FTAs but restrict their analysis to agreements with important investment provisions. They conclude that such agreements are associated with 50 percent higher FDI flows between the members.<sup>12</sup> Dee (2006) finds that the investment and cross-border service provisions in FTAs sponsored by large countries (including the United States) are positively related with inward FDI.

Sachs and Sauvant (2009) have authored the introduction to a forthcoming volume on bilateral investment treaties (BITs), double taxation treaties (DTTs), and foreign direct investment. They find the growth in worldwide FDI flows in the past two decades coincides with a proliferation of both BITs and DTTs. After reviewing the literature to investigate the causal relationship, if any, between treaties and FDI, they find no consensus on the role of BITs in FDI promotion. A few studies—including Neumeyer and Spess (2005), Salacuse and Sullivan (2005), and Buthe and Milner (2008, 2009)—do find that BITs increased FDI flows. However, these works are contradicted by Hallward-Driemeir (2003), Aisbett (2007), and Yackee (2007), who report that BITs have little or no effect on FDI. Sachs and Sauvant (2009) suggest that these diverse findings could reflect the varying structures of different BITs, structures that are not distinguished in the empirical studies. As for the connection between DTTs and FDI, Sachs and Sauvant (2009) find a similar lack of consensus. Blonigen and Davies (2004) found that DTTs have an insignificant effect on US inward and outward FDI between 1980 and 1999, while Neumeyer (2006) reports that developing countries can increase FDI inflows by signing DTTs with capital-exporting developed countries.

An often overlooked FDI-policy tool over the last 25 years is the investment promotion agency (IPA). These agencies, which have become increasingly common, try to sell multinational companies

---

11. A negative coefficient is also found for the Mexico-US FTA (i.e., the Mexican-US portion of NAFTA); however, this coefficient is not statistically significant.

12. Leshner and Miroudot (2007) also include bilateral investment treaties (BITs) in their analysis, but they find that the effect of BITs on FDI is insignificant.



on the advantages of investing in a particular country. Harding and Javorik (2007) and Charlton and Davis (2007) investigate the impact of IPAs on inward FDI flows. Both works find a strong positive relationship. However, it is unclear from the empirical studies whether IPAs increase the overall volume of FDI or merely shift it around. Indeed, Harding and Javorik (2007) find that IPAs in the same region can divert FDI flows from one country to another.

## **DATABASE ANALYSIS**

The foregoing literature review suggests that policy liberalization has exerted a positive impact on FDI growth but does not provide a definitive way to gauge what portion of FDI growth can be attributed to policy liberalization. We, therefore, draw on stylized facts—more evident when the figures for US inward and outward FDI stocks are disaggregated by industry—to gauge the role of policy liberalization. We also explore US outward FDI stock data disaggregated by destination country, to gain an alternative insight into the role of policy liberalization on the growth of US FDI stocks.

### **Industry Analysis**

In nominal terms, US outward FDI stock grew from roughly \$200 billion in 1982 to over \$2.3 trillion in 2006. The inward stock grew from around \$82 billion in 1982 to almost \$1.8 trillion in 2006. Figures 1 and 2 show that, over the 25-year period, this growth in US inward and outward FDI stocks has been relatively steady. Tables 3 and 8 present US outward and inward FDI stock data disaggregated by industry. Most industries show the strong upward trend exhibited in the overall data, but the reasons for growth likely vary by industry.

Technological improvements have sharply boosted FDI in several manufacturing industries. The computer industry, for example, has witnessed tremendous technology gains and an explosion of proprietary knowledge over the last 25 years. Both forces have caused the industry to expand globally. The US inward FDI stock in electronic and computer equipment and products grew by \$64 billion over the period. The US outward stock grew even more—by \$85 billion. General policy liberalization can explain only a small part of this growth.

Policy liberalization plays a clearer role in other industries. In the case of outward FDI, policy liberalization has opened up several regulated industries over the past 25 years to US firms—including finance, communications, utilities, insurance, transportation, and banking. For inward FDI, the United

States has opened the same six industries, plus motor vehicle manufacturing (transportation equipment in our database).<sup>13</sup>

Tables 4 and 9 contain calculations of FDI stock growth after making allowances for GDP growth. When accounting for US inward FDI growth (table 9) US GDP growth is used; when accounting for US outward FDI growth (table 4) world GDP growth is used.<sup>14</sup> The far right column of both tables indicates how much of the growth in FDI stocks is left unexplained after taking GDP growth into account. Based on these columns, two-thirds of the growth in total US outward FDI stock, and three-fourths of the growth in total US inward FDI stock, remain to be explained after making allowances for GDP growth.

Of these unexplained shares, what portion can be attributed to policy liberalization? Tables 4 and 9 show FDI stock data by industry, after subtracting the presumed effect of GDP growth. From these calculations we can make a rough guess as to the contribution resulting from policy liberalization.

Here is how we go about making a guess based on industry data. Our approach is to apply “all-or-nothing” arithmetic. We attribute *all* the “residual expansion” of FDI stocks, after accounting for GDP growth, in industries indentified as lead beneficiaries of policy liberalization, to that factor. These industries were heavily regulated by most countries 25 years ago, and several are still subject to extensive regulation. Using “all-or-nothing” arithmetic, it seems reasonable to attribute all the “residual expansion” in these industries to internal deregulation and greater openness to foreign investment. FDI in a few industries also suffered from policy tightening—US outward FDI in the petroleum-related industry being the clearest example.<sup>15</sup> All the “residual contraction” in petroleum is scored as a negative offset, the result of policy deliberalization. In all other industries we attribute *none* of the residual expansion of FDI stocks to policy liberalization or policy tightening. In box 2 we explain which industries were called out to make our estimate of the role of policy liberalization.

To be sure, our all-or-none methodology is crude. However, there are three reasons for believing the methodology is more likely to *underestimate*, than *overestimate*, the impact of policy liberalization on FDI. First, our literature review revealed that several broad policy measures—such as the removal of capital controls and reduction of corporate tax rates—contributed to overall FDI growth. By restricting our measure of the impact of policy liberalization to a few regulated industries, we disregard the impact of broad policy changes on other industries. Second, we are conservative in choosing which regulated

---

13. In the automotive industry, US “policy liberalization” took the form of *not* blocking the entry of Toyota, Nissan, and Honda in the 1980s, despite strident objections from US unions and some established auto firms.

14. For the US outward FDI stock calculations, “world growth” means GDP growth of all countries except the United States.

15. Over the past 25 years, national oil companies have seriously squeezed the “seven sisters,” in terms of control over petroleum reserves and production levels.

## Box 2 Rationale behind selected industries

Efforts to measure FDI restrictions across industries have been limited, and very little work has been aimed at measuring the change in restrictions over time. Scholars have been deterred by the laborious and imprecise task of categorizing the restrictiveness of FDI policies. Unlike tariffs on merchandise imports, which are reported according to standard Harmonized Tariff Schedule (HTS) codes, no such classification exists for evaluating the impact of FDI policies on investment flows. For example, it is hard to judge how much investment is deterred by a policy that requires a majority of the board of directors to be nationals of the FDI host country.

Brushing these conceptual difficulties aside, we draw on the work of Stephen Golub (2003) to identify the industries where policy liberalization has had a significant impact on the expansion of US outward FDI. His index figures are plagued with the same problems that visit any effort to measure FDI restrictions, but his work has the advantage of covering several industries over time and across countries. This allows us to identify countries and industries where restrictions were materially eased over the last 25 years. Golub's method for classifying the restrictiveness of FDI policies, based on the earlier work of Hardin and Holmes (1997), is shown in table 5. To calculate the index for a specific industry, Golub (2003) combines country-specific General Agreement on Trade in Services (GATS) commitments and OECD commitments with various official (e.g., US Trade Representative) and corporate sources (e.g., PriceWaterhouseCoopers). Golub's index ranges between zero and one, with an index score of one indicating the most restrictive FDI policies.

Table 6 shows the average FDI restrictiveness indexes for 20 OECD countries, in selected years between 1981 and 2005, for several industries. Restrictions have been significantly eased on telecommunications, finance (both insurance and banking), electric utilities, and transportation. Restrictions have been eased only slightly for business services, construction, distribution, tourism, and manufacturing. These changes inform our selection of industries where policy liberalization positively affected US outward FDI; table 7 lists the industries in question. We list the petroleum industry as an industry where policy changes had a *negative* effect on US outward FDI. Golub did not cover the petroleum industry, but measures taken by various national oil companies against the "seven sister" oil companies were severe over the past 25 years.

While Golub's dataset covers the United States, his indexes show little change in US restrictiveness between 1981 and 2005. This is mostly because explicit US FDI policies—the ones covered in Golub's indexes—have not changed much since 1981. However, drastic policy and regulatory changes—like the Bell Telephone break up or electric utility deregulation—have taken place in a few US industries. In our opinion, these changes have exerted a positive influence on FDI to the United States since 1982.

Table 10 lists the affected industries. Transportation equipment is included because the US government basically changed course in the 1980s and permitted large-scale investment by Japanese automakers. Banking, finance, and insurance are included because of various legislative acts that liberalized the financial sector, most notably the Foreign Bank Supervision and Enhancement Act of 1991 and the Financial Services Modernization Act of 1999 (Tschoegl 2003). Utilities are included largely because of the reforms under the Public Utility Regulatory Policies Act of 1978 and the Energy Policy Act of 1992 (NRC 2004). The communications industry is included because of the Bell Telephone divestiture, effective in 1984, and the reforms under the Telecommunications Act of 1996 (AT&T Corporation 2008, FCC 2004). Transportation is included because of the various deregulations that occurred in the 1980s, most notably the Aviation Deregulation Act of 1978, the Motor Carrier Act of 1980, the Staggers Rail Act of 1980, and the Ocean Shipping Act of 1984 (US Department of Transportation 2005). The full effect of these transportation deregulations were not fully realized until after the first year of our analysis, 1982.

industries might have benefited from policy liberalization. For example, we do not consider the growth of FDI stocks in the wide-ranging “industry” known as “Holding Companies” to be driven by policy liberalization, despite its close link to the finance sector.<sup>16</sup> Third, when accounting for GDP growth we disregard the endogenous relationship between GDP and policy liberalization. Policy liberalization (independent of any expansion in FDI) has undoubtedly contributed to GDP gains over the past 25 years; by ignoring this aspect of the policy picture we slightly underestimate the role of policy in FDI growth.<sup>17</sup>

Tables 7 and 10 show our calculations of the role of policy liberalization. The method behind both tables starts with the 1982 FDI stock and the appropriate GDP growth over a span of 25 years (either US or world growth) to arrive at a predicted 2006 FDI stock. The predicted 2006 stock level is subtracted from the actual 2006 FDI stock to determine what portion of FDI stock growth is not explained by GDP growth—i.e., the “residual expansion” of the FDI stock. The same method is followed in tables 4 and 9. The “residual expansion” of FDI stocks in the identified industries is then added up and expressed as a share of total “unexplained” FDI growth to estimate the impact of policy liberalization (the last two columns in tables 7 and 10).

Table 7 shows our guesses as to the role of policy changes in US outward FDI stock growth over the last 25 years. According to these judgmental estimates, roughly 27 percent of the unexplained US outward FDI stock growth can be attributed to policy liberalization. Table 10 shows the corresponding guesses for US inward FDI stock. Here the judgmental estimate of policy liberalization is larger, roughly 39 percent of the unexplained inward FDI stock growth. “Everything else” or “market forces plus technology” accounts for the remaining unexplained shares of US outward FDI stock growth (73 percent) and of US inward FDI stock growth (61 percent). The role of financial deregulation in the United States and abroad has been dramatic both for US and foreign firms. In dollar terms, the calculated impact of policy changes on all US inward FDI, roughly \$500 billion, exceeds the calculated impact on US outward FDI, \$385 billion. A major reason for the difference is the negative impact of nationalistic forces abroad on US petroleum investment.

---

16. From 1982 to 2006, the “residual expansion” (after accounting for GDP growth) of US outward FDI in the BEA category “Holding Companies” was \$619 billion. If all of this growth was added to our estimate, the role of policy liberalization in increasing total US outward FDI stock would more than double. Even if we just attributed half the increase in outward FDI of holding companies (\$310 billion) to policy liberalization, that would increase our estimate of the overall impact of policy liberalization on US outward FDI by over 60 percent. The residual expansion of the US inward FDI stock in the Holding Company industry was \$73 billion over the period. Attributing this growth to policy liberalization would also enlarge our estimates.

17. One factor that we do not consider, which may inflate our estimates, is the role of the stock market. Mergers and acquisitions (M&A) make up a large portion of US FDI flows (both inward and outward), and they are closely tied to stock market fluctuations. In fact, the correlation between the annual New York Stock Exchange (NYSE) composite price index and annual US M&A purchases (a component of outward FDI) between 1987 and 2006 was 0.95. The correlation between the same NYSE composite price index and US M&A sales (a component of inward FDI) was 0.70.

Expressed as a share of *total* inward and outward FDI stock growth (not just the “residual expansion”), world GDP growth accounted for roughly 35 percent of US outward FDI stock growth, and US GDP growth accounted for roughly 23 percent of US inward FDI stock growth. Policy liberalization, under our calculations, accounted for roughly 18 percent of US outward FDI stock growth and 30 percent of US inward FDI stock growth. The “everything else” or “technology” category, accounted for roughly 48 percent of US outward FDI stock growth and roughly 47 percent of US inward FDI stock growth.<sup>18</sup>

### Industry Analysis—5-Year Averages

We carried out additional calculations to gauge the impact of policy liberalization on average annual FDI stocks over five 5-year intervals during the last 25 years, and the results are shown in table 11. Table 11 uses the same method and industries as tables 5 and 8 but only summarizes the final results. The calculations suggest that the bulk of FDI stock growth attributable to policy changes occurred in the 1990s. As documented by Sachs and Sauvant (2009), the proliferation of BITs and DTTs in recent years could be a possible explanation for this pattern, at least so far as outward FDI is concerned. As of 2006, over 2,500 BITs had been signed worldwide, up from just under 500 in 1990 (Sachs and Sauvant 2009).

### Country Analysis

To supplement the industry analysis, and provide an alternative view of the role of policy liberalization, we investigated US outward FDI stocks disaggregated by destination country. Since US inward investment policy does not usually discriminate by origin country, in this exercise we ignore growth in US inward FDI. Table 12 shows US outward FDI stocks to major US destination countries, with minor countries grouped by region.<sup>19</sup> The US outward FDI stock in most countries has increased substantially over the period. The reasons for the growth likely vary by destination country, with policy changes often a major factor. Some countries, like the United Kingdom and Germany, have practiced liberal policies toward inward FDI for decades, while others like China, India, and Japan have just begun to open their doors to foreign investment. Parallel to the industry analysis, we examine the “residual expansion” in FDI, after making allowances for GDP growth, in countries deemed to have implemented major policy changes over the last 25 years, to guess the magnitude of policy liberalization on FDI.

---

18. In dollar terms, the estimated impact of “market forces plus technology” on outward FDI stock, about \$1 trillion, exceeds their impact on inward FDI stock, about \$800 billion.

19. The total FDI stock in table 12 differs slightly from the total FDI stock in table 3. The discrepancy reflects the use of extrapolation methods to fill in missing data points in a few industries in the industry database. Individually identified countries in table 12 accounted for roughly 97 percent of the total US outward FDI stock in 2006.

Table 13 provides growth calculations for US outward FDI stocks by destination country. Each destination country's GDP growth is used for the calculations, except for a few Caribbean island nations (e.g., the Bahamas and Bermuda) where world GDP growth is used.<sup>20</sup> The calculation method is identical to the method used in tables 4 and 9. Most countries have a positive amount of FDI growth left unexplained after making allowances for GDP growth. A few have a negative amount, meaning growth in the US outward FDI stock with the country in question did not meet growth expectations. In a few countries the reason for the limited FDI growth is probably policy related, but in others, like Panama, it is likely due to limited investment opportunities.

Table 14 shows estimates of the role of policy changes in US outward FDI stock growth based on the country destination analysis. In the table, several Asian nations are included because they have become relatively more open to US investment over the last 25 years. Ireland is included because of its major tax overhaul, which made the country very friendly to inward FDI. Russia and a few Eastern European nations are included owing to the fall of communism. Several Caribbean island nations are included because they reformed their tax codes and regulatory environments to promote financial-sector FDI. Central and South American nations, like Chile, Argentina, and Mexico, are included because of the economic reforms they undertook during the 25-year period. Brazil, Peru, and other Central American nations are listed on the negative side because they have historically impeded inward FDI flows. In box 3 we provide a more indepth explanation for the countries selected to make our estimate of the role of policy liberalization.

In aggregate terms, the results shown in table 14 are remarkably similar to the results in table 7, which reports the corresponding analysis by industry. The total policy impact is larger according to the country analysis (\$434 billion) than the industry analysis (\$385 billion), but the difference largely reflects the negative impact of policy changes in the petroleum sector. (Nationalistic petroleum policies are somewhat masked in the country analysis.) However, in both analyses the role of policy liberalization in explaining the share of “residual” FDI growth, after making allowances for GDP growth, is roughly 25 to 30 percent. By implication, the share of “residual growth attributable to “everything else”—“market forces plus technology”—is 70 to 75 percent.

In terms of parsing the *total* US outward FDI stock growth, the country destination estimates indicate that GDP growth explains roughly 35 percent of the *total* FDI stock growth; policy liberalization explains another 20 percent; and “everything else” or “market forces plus technology” explains 45 percent of the *total* growth.

---

20. For these Caribbean islands, most FDI is in the financial sector; consequently, FDI in these islands is essentially influenced by world GDP growth rather than home-nation GDP growth.

### Box 3 Rationale behind selected countries

To identify the countries where policy liberalization has had a significant impact on the expansion of US outward FDI, we draw on two sources: an FDI restrictiveness index developed by Agosin and Machado (2007) and a dataset of FDI policy changes compiled by the United Nations Conference on Trade and Development (UNCTAD). We do not use the work of Stephen Golub, because his time-series data focused on OECD countries, while most liberalization over the last 25 years has taken place in developing countries.

Agosin and Machado (2007) use data from the International Monetary Fund's *Exchange Arrangements and Exchange Restrictions Annual Report* to create their index of FDI restrictions. Their index ranges between zero and five, with an index score of zero indicating maximum restrictiveness. Their index reflects the follow policies: nonautomatic registration and approval, sector restrictions, restrictions in the percentage of ownership allowed, and controls on the repatriation of capital. Table 15 contains Agosin and Machado's index for 111 countries in 1990, 1996, and 2002. Most countries indicate an easing of restrictions over the period. The trend of liberalization displayed in table 15 informs our selection of countries where policy liberalization has had a significant impact of US outward FDI; table 14 lists these countries.

Since 1992, UNCTAD has kept track of FDI policy changes in 179 countries. The UNCTAD data are broad but not very deep: Policy changes are only recorded as "more favorable" or "less favorable" to investment. Table 16 shows the UNCTAD data. Overall, since 1992, more favorable policy changes outnumbered less favorable changes by almost 2,000 episodes. The countries listed in table 14—countries where we believe policy changes had a significant impact on US outward FDI—are loosely those countries with numerous positive policy changes, as recorded by UNCTAD. A few countries with a substantial amount of more favorable policy changes—e.g., Vietnam—are not included in table 14 because the US FDI stock in 2006 was small (i.e., less than \$500 million). A few countries with a small number of positive policy changes are, however, included in table 14 because the policy changes were significant—e.g., the end of Soviet rule or the substantial market reform exhibited in Ireland or Argentina.

Table 17 summarizes our estimates of the impact of policy liberalization on US outward FDI stock viewed from both the country and the industry approaches, using 5-year averages of FDI stock and GDP data. Like the full-period analysis, the temporal patterns are remarkably similar: On a 5-year basis, the shares of unexplained FDI growth explained by policy liberalization are roughly the same. Most FDI growth from policy liberalization appears to come in more recent periods, in both the country and industry analyses.

## BENEFIT OF FDI GROWTH

Graham and Krugman (1995) identified two broadly defined avenues through which an economy can benefit from inward FDI: increased international integration and external economies (spillover effects). Increased integration comes from the impact of FDI on trade in goods, services, and knowledge (e.g.,

headquarters coordination). External economies usually take the form of technological spillovers that occur when domestic firms imitate the best practices of foreign firms. In our effort to quantify the benefit of US inward FDI stock growth, and ultimately the role of policy liberalization, we only consider technological spillovers. Increased integration is an important benefit of US inward FDI, but as Graham and Krugman (1995) put it, “inward FDI may be expected to bring gains from integration that are qualitatively similar to the conventional gains from trade, but the magnitude of these gains is anyone’s guess.” In a companion analysis, we make such a guess but under the heading of benefits from expanded trade.<sup>21</sup> This evaluation of technological spillovers only gauges the role of FDI in providing a one-time shock to economic growth via improvements in productivity. Box 4 explores the role of FDI in boosting the long-term rate of economic growth, principally a developing-country phenomenon.

In an effort to quantify the benefit of US outward FDI growth, and the role of policy liberalization, we rely on a relatively simple measure: the income received by US firms from their direct investments abroad. Since this measure does not speak to either of the avenues proposed by Graham and Krugman (1995), we believe that the calculation represents a low-end estimate of the economic benefit to the United States from US outward FDI. In the next two sections, we tackle benefits from US inward and outward FDI growth separately.

## **Inward FDI**

To assess the impact of inward FDI stock growth on US economic growth, we consider only technological spillovers. Consequently, our analysis probably underestimates the payoff because the impact of inward FDI on economic integration is ignored. However, as mentioned, in companion studies, we evaluate the benefits of rising trade densities on economic output, and these estimates capture, among other forces, much of the impact of inward FDI on economic integration.

Private GDP in the United States over the period 1982 to 2006 grew about 130 percent in real terms or about \$5,300 billion (using 2000 dollars). As Graham and Krugman (1995) observed, a portion of this growth should be attributed to US policy liberalization, which in turn attracted inward FDI. A principal avenue for inward FDI to enhance GDP is through the technology spillovers attributable to the activities of foreign multinational enterprises (MNEs). “Spillover” is a nice word for saying that sharp competition from innovative foreign companies motivates US firms, through a combination of fear and greed, to emulate the best practices from abroad and step up their own productivity.

In a pioneering study, Keller and Yeaple (2005) estimated the impact of US inward manufacturing FDI on US manufacturing-sector productivity growth between 1987 and 1996. To gauge the role

---

21. Our methods for evaluating gains from trade expansion are spelled out in Bradford, Grieco, and Hufbauer (2006).



#### **Box 4 Openness to FDI and economic growth**

Many scholars have conducted empirical research on the impact of openness to FDI on economic growth rates. The studies typically apply cross-sectional or panel-data analysis to a large set of countries, using standard control variables (e.g., inflation and trade openness) coupled with some type of FDI openness measure. Developing countries are the predominant subjects, but some of the studies add industrial countries to the mix. Cline (2008) surveys the relevant FDI literature in a paper looking more broadly at financial globalization. He reports evidence that openness to FDI boosts economic growth in developing countries, but the connection is not conclusive for developed countries.

In an earlier study, Balasbramanyam, Salisu, and Sapsford (1996) found a positive link between growth and FDI but only for countries *with* open trade regimes. Borensztein, de Gregorio, and Lee (1998) find coefficients that are not significant for the link between FDI openness and economic growth. However, the same authors report that the interaction term between FDI and human capital is positively related to economic growth. They suggest that this finding supports the “technological spillover” thesis for FDI and economic growth. Haveman, Lei, and Netz (2001) find a large impact of FDI on growth. Their analysis suggests that, for the average country in a set of both developing and developed countries, increasing FDI inflows from 2 percent of GDP to 3 percent of GDP will increase the annual growth rate by 1 percentage point.

By contrast, Choe (2003) and Carkovic and Levine (2005), using a similar approach as earlier studies but covering a wider spectrum of countries, find no definitive link between FDI and economic growth. Investigating the discrepancy between the two studies just cited and earlier works, Blonigen and Wang (2005) contend that the main reason is country coverage. The earlier studies (Balasbramanyam, Salisu, and Sapsford 1996; Borensztein, de Gregorio, and Lee 1998) did not include developed countries, while the later studies do. Blonigen and Wang (2005) then replicate the analysis of earlier works, updating country coverage where necessary and splitting countries into developing and developed groups. In this exercise, they find a significant link between FDI into developing countries and economic growth but no significant link in developed countries.

of inward FDI in productivity growth—i.e., the spillover effect—the authors applied a sophisticated econometric technique to microeconomic data (1,277 US-owned firms) to relate firm-specific productivity growth to the rising share of employment by foreign firms in each firm’s industry. They conclude that approximately 11 percent of US manufacturing productivity growth, between 1987 and 1996, could be attributed to US inward FDI in the manufacturing sector overall.

The Keller and Yeaple (2005) estimate can be extrapolated to produce a “ballpark” estimate of the expansion of total US inward FDI on US GDP growth over the longer period, 1982 to 2006. This exercise entails considerable guesswork because Keller and Yeaple (2005) examined only the manufacturing sector. Much of the growth of inward FDI took place in other sectors, finance being prominent.<sup>22</sup>

---

22. Since Keller and Yeaple (2005) only look at productivity spillovers within a given industry, their estimates do not include the impact of inward FDI across industries (i.e., vertical spillovers). In this regard, by using the Keller and Yeaple coefficient (0.516), we may underestimate the impact of inward FDI on US productivity growth.

The 11 percent estimate by Keller and Yeaple (2005) rests on the estimated coefficients of the variables used to gauge the FDI-spillover effect of foreign MNEs. The authors find a positive impact (coefficient of 0.213) for the increase in the share of foreign employment in firm  $i$ 's industry in the current year on firm  $i$ 's productivity growth for the year. They find a similar impact (coefficient of 0.303) for the increase in the share of foreign employment in firm  $i$ 's industry in the previous year—i.e., a one-year lag—on firm  $i$ 's productivity growth in the current year. Keller and Yeaple (2005) also test for a two-year lag effect and report a coefficient that is negative but insignificant. The authors conclude that the total impact of foreign employment in a firm's industry on that specific firm's total factor productivity (TFP) can be summarized by a coefficient of 0.516 (0.203+0.313). The 0.516 coefficient says that if foreign employment in a firm's industry increased by 10 percentage points (e.g., from 0.15 to 0.25), that firm's productivity would increase by 0.516 times 10 percent or 0.0516 (i.e., 5.2 percent).

Keller and Yeaple (2005) use the 0.516 coefficient to estimate the impact of inward FDI on productivity growth in US manufacturing over the length of their sample (1987 to 1996). They multiply 0.516 times the percentage-point increase in foreign employment in US manufacturing between 1987 and 1996 (4 percentage points) divided by the average TFP increase among the 1,277 US manufacturing firms in their sample (19 percent). From this calculation (namely  $0.516 \times 0.04 / 0.19$ ) the authors conclude that roughly 11 percent of the growth in US manufacturing productivity between 1987 and 1996 can be explained by the spillover effect from inward FDI.

We extend Keller and Yeaple's (2005) analysis to the whole economy and to a longer time period in order to estimate the gain from policy-induced US inward FDI growth over the last 25 years. First, we apply the 0.516 coefficient, estimated from the experience in US manufacturing, to the whole private US economy.<sup>23</sup> Second, we replace their productivity growth estimate (namely 19 percent for the average manufacturing firm between 1987 and 1996) with an estimate of TFP growth for the entire economy between 1982 and 2006 (namely 30 percent).<sup>24</sup> Third, we replace their "change in foreign employment" in US manufacturing (namely 4 percentage points) with a broader figure: the change in the share of foreign employment in the whole private US economy between 1982 and 2005 (namely 1.24 percentage points).<sup>25</sup>

23. This is a bold extrapolation, but many of the avenues for technological spillovers in the manufacturing sector are present in other private sectors as well. Keller and Yeaple (2005) conjecture that, within manufacturing, spillovers are more likely in industries that develop proprietary knowledge, and proprietary knowledge is certainly prominent in advanced service industries. Keller and Yeaple (2005) report that the estimated spillover effect is significant in manufacturing industries with high R&D intensity but insignificant in industries with low R&D intensity.

24. Based on OECD (2008), since US TFP data were available only from 1985 through 2006, we use the average growth rate over this period to obtain a TFP growth figure between 1982 and 2006. The source refers to total factor productivity as multifactor productivity.

25. We use nonbank foreign affiliate data for 1982 and 2005, bank foreign affiliate data for 1980 and 2002, and total US private employment figures for 1982 and 2005. Bank foreign affiliate data are collected by the Bureau of Economic Analysis only during their benchmark surveys, which are completed about every 5 years. Using these figures we find the

Using these figures we can apply Keller and Yeaple's (2005) approach to calculate benefits for the full 25-year period and whole private US economy. The resulting estimate is that approximately 2.14 percent of the increase in US TFP between 1982 and 2006 can be explained by the total increase in US inward FDI. The calculation is:  $0.516 \times 0.0124 / 0.30 = 0.0214$ .

Earlier we calculated that roughly \$500 billion of the increase in US inward FDI stock between 1982 and 2006 could be attributed to policy changes, or about 30 percent of the total growth in the inward FDI stock (\$1,660 billion).<sup>26</sup> Applying this share, we conclude that approximately two-thirds of 1 percent ( $0.30 \times 2.14 = 0.64$  percent) of the increase in US TFP over the last 25 years can be explained by the growth of US inward FDI induced by US policy liberalization (stated more fully,  $(0.516 \times (0.0124 \times 0.30)) / 0.30 = 0.0064$ ).<sup>27</sup>

US real private GDP in 2006 was approximately \$9,338 billion. In the absence of the 30 percent increase in TFP observed over the last 25 years, US private GDP would presumably be 30 percent lower, or roughly \$7,186 billion. In other words, a GDP gain of \$2,152 billion can be attributed to TFP growth over the past 25 years.<sup>28</sup> Applying the 2.14 percent estimate cited earlier, we conclude that, in 2006 an annual TFP gain of about \$46 billion can be attributed to the growth over 25 years in US inward FDI stock (calculated as  $0.0214 \times \$2,152$  billion).

The share of this \$46 billion figure attributable to policy liberalization is about 30 percent, or roughly \$14 billion annually. According to our earlier calculations, the share attributable to the expected rate of FDI growth (as measured by US GDP growth) is about 23 percent, or roughly \$11 billion,<sup>29</sup> and the share attributable to "everything else" or "market forces plus technology" is roughly 47 percent, or \$22 billion annually.

---

share of foreign employment (by majority-owned foreign firms) in the whole private US economy was about 4.67 percent in 2005, up from 3.43 percent in 1982.

26. The similarity between the figure for US TFP growth between 1982 and 2006 and the figure for the portion of US inward FDI stock growth attributable to policy changes is coincidental. The productivity growth figure is 29.95 percent and the policy share figure is 30.24 percent; we present both as 30 percent in the discussion.

27. The corresponding impact attributable to "technology" is roughly 1.01 percent. This comes from our earlier calculation that "technology" accounted for \$784 billion of the \$1,660 billion (47 percent) gained in US inward FDI stock between 1982 and 2006. Stated more fully, the "technology" calculation is:  $0.516 \times (0.0124 \times 0.42) / 0.30 = 1.01$ .

28. Assuming full employment, the increase in US TFP over the last 25 years is fully reflected in US GDP growth over the period.

29. We acknowledge that attributing a gain to US GDP from the growth in inward FDI stock that was predicted by US GDP growth has a circular quality. Bear in mind, however, that we use US GDP growth between 1982 and 2006 to predict the expected FDI stock in 2006. In turn, that expansion in FDI is calculated to raise the GDP level by \$11 billion annually in 2006 and subsequent years.

The foregoing calculations generate a minimalist estimate of the benefits to the US economy from inward FDI. In this paper, we do not attempt to offer a comprehensive estimate, but it is worth noting three benefits channels that are overlooked:

- Inward FDI adds to the private US capital stock, and more capital per employee generates higher compensation per employee.<sup>30</sup>
- Inward FDI reinforces US trade links with the global economy, and more intense trade boosts productivity and lowers prices (Bradford, Grieco, and Hufbauer 2006).
- Foreign multinationals operating in the United States have a record of paying better wages and conducting more R&D than US firms in the same industry (Graham and Krugman 1995).

## Outward FDI

In terms of outward FDI, the spillover effects previously described mainly accrue to FDI host countries, so the type of analysis used to determine the impact of US inward FDI does not seem applicable. To be sure, an argument can be made that US firms increase their own productivity inside the United States by discovering new ways of doing business from their operations abroad. Moreover, it seems likely that outward FDI improves US supply chains with the world economy, stimulating both US imports and exports. For present purposes, however, we ignore these positive effects, but some of them are captured in our companion analysis of trade benefits.<sup>31</sup> In this exercise we rely on a relatively basic figure of the benefits of outward FDI, namely, income receipts to US-based multinational firms. This approach generates a low-end estimate of the benefits to the United States from policy-induced growth in US outward FDI.

For the purpose of these calculations we acknowledge that, if US outward FDI stock had been invested domestically, the US economy might benefit from a larger capital stock.<sup>32</sup> However, this benefit would not include the “extra” profits from FDI—namely, the payoff from application of firm-specific know-how to new foreign markets (usually through mergers and acquisitions). The “extra” profits show up in various forms, including retained earnings, dividends, interest, royalties, and fees.<sup>33</sup> To account for the forgone returns if the entire US outward FDI stock had been invested in the United States, we subtract from FDI income receipts the income that might have been earned had the outward FDI stock

---

30. This is a standard result from modeling the US economy with Cobb-Douglas or CES production functions.

31. Our methods for evaluating gains from trade expansion are spelled out in Bradford, Grieco, and Hufbauer (2006).

32. Work by Desai, Foley, and Hines (2005) suggests that outward FDI by US firms may actually complement domestic investment rather than displace it. However, to be cautious we still take domestic stock displacement into consideration.

33. It is doubtful that this way of looking at outward FDI will allay the concerns of the AFL-CIO, Lou Dobbs, and other opponents of MNE operations, who assert that when US firms move their operations abroad instead of investing in the United States, the result is to stifle US economic growth.

in a given year been invested at the prevailing US Treasury bill rates. The rationale for the approach flows from the underlying motivation for overseas investment. Experts on direct investment generally subscribe to the thesis, first proposed by Hymer (1976), that the driving force for firms to expand abroad is to apply firm-specific skills or technology to a wide market, not to reallocate the world's capital. In 2006, about 79 percent of US outward FDI flows took the form of mergers and acquisitions, while roughly 21 percent was new or "greenfield" investments (UNCTAD 2008a). These proportions suggest that a large portion of US outward FDI responds to opportunities to brighten the performance of acquired firms abroad, not a decision to escape the United States.<sup>34</sup>

We attribute income flows on outward FDI, minus forgone returns evaluated at the Treasury bill rate, as a benefit to the US economy. The calculation is carried out in table 18. This money would not have been earned in the absence of foreign investment by US-based MNEs. Table 18 shows US income receipts from US outward FDI between 1982 and 2006. Income receipts (expressed in current dollars) have expanded roughly ten-fold over the last 25 years, up from below 1 percent of US GDP in 1982 to above 2 percent in 2006. Table 18 also shows our estimates of the forgone returns from placing capital stock abroad rather than in the United States. The calculation applies the US one-year Treasury bill rate to the whole US outward FDI stock on a year-by-year basis. A simple rationale for this calculation can be expressed as follows: US outward FDI is indirectly financed by inward flows of portfolio capital; at the margin, these inward flows earn the Treasury bill rate.

Between 1982 and 2006, US income receipts from FDI, less the forgone returns on the outward capital stock, grew by \$188 billion. We take this figure to show a conservative estimate of the benefit of the expansion in outward FDI. Earlier we determined that roughly 18 percent of the growth in outward FDI can be explained by policy liberalization abroad. Consequently we assume that policy liberalization created roughly 18 percent of the growth in US income receipts from FDI. Since the *total* dollar amount of growth in inward receipts was \$188 billion, our arithmetic leads to the conclusion that US outward FDI stock growth attributable to policy liberalization contributed roughly \$34 billion to US GDP in 2006 ( $0.18 \times \$188$  billion). Our earlier calculations suggest that about 35 percent of the \$188 billion gain, or roughly \$66 billion, is attributable to world GDP growth, and 48 percent of the \$188 billion gain, or roughly \$90 billion, is attributable to "everything else" or "market forces plus technology."<sup>35</sup>

---

34. Over the past 25 years, the United States has been a persistent importer, not exporter of capital. The year 1985 was the last year when US-owned assets abroad totaled more than foreign-owned assets in the United States. Since 1985, the difference between the two figures has widened on a book value basis. At the end of 2006, foreign-owned assets in the United States were worth roughly \$16.3 trillion, while US-owned assets abroad were worth roughly \$13.8 trillion. With direct investment valued at market levels, in 2006 the value of foreign-owned assets in the United States was roughly \$17.4 trillion and US-owned assets abroad were worth roughly \$15.3 trillion (Bureau of Economic Analysis, 2008).

35. These figures do not sum to \$188 billion because of rounding.

## SUMMING UP

Table 19 summarizes our results from the foregoing analysis. Earlier, using stylized facts from FDI data disaggregated by industry, we determined that roughly 30 percent of US inward FDI stock growth and 18 percent of US outward FDI stock growth between 1982 and 2006 can be attributed to policy liberalization. These policy-impact estimates reflect an allowance for the expected rate of FDI growth, as determined by GDP growth. After identifying the share of FDI stock growth caused by these two factors, our estimates suggest that about half of the growth in US inward and outward FDI stocks can be explained by what we call “everything else”—a combination of market forces and technological change.

Using these FDI stock estimates, we went on to assess the benefits to the United States, measured by GDP gains, from each of the three sources of FDI growth. We estimate that, in *total*, and as a conservative measure, US inward and outward FDI stock growth between 1982 and 2006 contributed roughly \$234 billion annually to the level of US real GDP in 2006. Of the total \$234 billion annual gain, roughly \$77 billion results from the expected rate of FDI stock growth (as a simple consequence of GDP growth); \$48 billion is attributable to FDI stock growth from policy liberalization; and \$112 billion is attributable to FDI stock growth from “everything else”—a combination of market forces and technological change.<sup>36</sup>

---

36. These figures do not sum to \$234 billion because of rounding.

## APPENDIX

### Data Sources and Notes

**US inward foreign direct investment:** BEA (Bureau of Economic Analysis). 2008. Operations of Multinational Companies, “Foreign Direct Investment in the U.S.: Selected Tables.” Available at [www.bea.gov](http://www.bea.gov) (accessed April 16, 2008).

**US outward foreign direct investment:** BEA (Bureau of Economic Analysis). 2008. Operations of Multinational Companies, “U.S. Direct Investment Abroad: Selected Tables.” Available at [www.bea.gov](http://www.bea.gov) (accessed April 16, 2008).

*Notes:* For the BEA FDI data disaggregated by industry, coding breaks occurred between the following years: 1988–89, 1993–94, 1998–99, and 2000–2001. To produce a full dataset with the BEA data a concordance between industries was created and implemented by hand across the coding breaks. For the BEA FDI data disaggregated by industry and by country, many data points are omitted due to disclosure requirements. To produce a full dataset we extrapolate from the surrounding industry or country data points.

**US GDP data** comes from the Bureau of Economic Analysis. **GDP data of other countries** comes from the International Monetary Fund’s *World Economic Outlook*.

**FDI data used in tables 1 and 2:** UNCTAD (United Nations Conference on Trade and Development). 2008. FDI Statistics, “Interactive Data: FDI Flows and Stocks.” Available at [www.unctad.org](http://www.unctad.org) (accessed April 16, 2008).

**Mergers and acquisitions data:** UNCTAD (United Nations Conference on Trade and Development). 2008. FDI Statistics, “Interactive Data: Mergers and Acquisitions.” Available at [www.unctad.org](http://www.unctad.org) (accessed April 16, 2008).

**FDI restrictiveness data** across industries comes from directly from Stephen S. Golub. The basic data are available in Golub (2003), but the detailed data was obtained directly from the author.

**Foreign nonbank affiliate employment data:** BEA (Bureau of Economic Analysis). 2008. Operations of Multinational Companies, “Foreign Direct Investment in the U.S.: Selected Tables.” Available at [www.bea.gov](http://www.bea.gov) (accessed April 16, 2008).

**Foreign bank affiliate employment 2002 data:** BEA (Bureau of Economic Analysis). 2002. Foreign Direct Investment in the United States: Revised Financial and Operating Data from the 2002 Benchmark Survey. Available at [www.bea.gov](http://www.bea.gov) (accessed April 16, 2008).

**Foreign bank affiliate employment 1980 data:** BEA (Bureau of Economic Analysis). 1980. *Foreign Direct Investment in the United States, 1980*. Washington: US Department of Commerce.

*Notes:* We use nonbank foreign affiliate employment data for 1982 and 2005, bank foreign affiliate employment data for 1980 and 2002, and total US private employment figures for 1982 and 2005. Bank foreign affiliate data are collected only by the Bureau of Economic Analysis during their benchmark surveys, which are completed about every five years.

**US private employment data:** Federal Reserve Bank of St. Louis. 2008. Economic Data. "Series: USPRIV: All Employees: Total Private Industries." Available at <http://research.stlouisfed.org> (accessed April 16, 2008).

**New York Stock Exchange data** used to make the calculations discussed in footnote 18 is from [www.nyse.com](http://www.nyse.com) (accessed July 15, 2008).

**Interest rate data:** Board of Governors of the Federal Reserve System. 2008. "Selected Interest Rates: Treasury constant maturity, 1-year, annual." Available at <http://federalreserve.gov> (accessed April 16, 2008).

**Tax data:** Klemm, Alexander. 2005. *Corporate Tax Rate Data*. London: Institute for Fiscal Studies. Available at [www.ifs.org.uk](http://www.ifs.org.uk) (accessed April 14, 2008).

**Total factor productivity (TFP) data:** OECD (Organization for Economic Cooperation and Development). 2008. OECD Stat Extracts, "Productivity: Multi-Factor Productivity." The database is available at <http://stats.oecd.org> (accessed April 16, 2008).

*Notes:* US TFP data were only available from 1985 to 2006; we use the average growth rate over this period to obtain a total factor productivity growth figure between 1982 and 2006. The source refers to total factor productivity as multifactor productivity.



## REFERENCES

- Agosin, Maunel R., and Roberto Machado. 2007. Openness and the International Allocation of Foreign Direct Investment. *Journal of Development Studies* 42, no. 7.
- Aisbett, Emma. 2007. *Bilateral Investment Treaties and Foreign Direct Investment: Correlation versus Causation*. CUDARE Working Papers. University of California, Berkeley. Available at: <http://repositories.cdlib.org> (accessed April 4, 2008).
- Asiedu, Elizabeth, and Donald Lien. 2004. Capital Controls and Foreign Direct Investment. *World Development* 32, no. 3: 479–90.
- Asiedu, Elizabeth, and Kwabena Gyimah-Brempong. 2007. The Effect of the Liberalization of Investment Policies on Employment and Investment of Multinational Corporations in Africa. *African Development Review* (forthcoming).
- AT&T Corporation. 2008. *The History of AT&T*. [www.corp.att.com](http://www.corp.att.com) (accessed July 15, 2008).
- Balasubramanyam, V. N., M. Salisu, and David Sapsford. 1996. Foreign Direct Investment and Growth in EP and IS Countries. *Economic Journal* 106, no. 434 (January): 92–105.
- Blonigen, Bruce A., and Ronald B. Davies. 2004. The Effects of Bilateral Tax Treaties on US FDI Activity. *International Tax and Public Finance*, no. 11: 601–22.
- Blonigen, Bruce A. 2002. Tariff-Jumping Antidumping Duties. *Journal of International Economics*, no. 57: 31–49.
- Blonigen, Bruce. A. 2005. *A Review of the Empirical Literature on FDI Determinants*. NBER Working Paper 11299. Cambridge, MA: National Bureau of Economic Research. Available at [www.nber.org](http://www.nber.org) (accessed April 4, 2008).
- Blonigen, Bruce A., and Miao Grace Wang. 2005. Inappropriate Polling of Wealthy and Poor Countries in Empirical FDI Studies. In *Does Foreign Direct Investment Promote Economic Development?* ed. Theodore H. Moran, Edward M. Graham, and Magnus Blomström. Washington: Institute for International Economics and Center for Global Development.
- Borensztein, E., J. De Gregorio, and J-W Lee. 1998. How Does Foreign Direct Investment Affect Economic Growth? *Journal of International Economics* 45: 115–35.
- Bradford, Scott C., Paul L. E. Grieco, and Gary Clyde Hufbauer. 2006. The Payoff to America from Global Integration. In *The United States and the World Economy: Foreign Economic Policy for the Next*

*Decade*, by C. Fred Bergsten and the Institute for International Economics. Washington: Institute for International Economics.

Buthe, Tim, and Helen V. Milner. 2008. The Politics of Foreign Direct Investment into Developing Countries: Increasing FDI through International Trade Agreements? *American Journal of Political Science* 52, no. 4 (October): 741–62.

Buthe, Tim, and Helen V. Milner. 2009. Bilateral Investment Treaties and Foreign Direct Investment: A Political Analysis. In *The Effect of Bilateral Investment Treaties and Double Taxation Treaties on Foreign Direct Investment Flows*, ed. Lisa Sachs and Karl P. Sauvant. New York: Oxford University Press (forthcoming).

Carkovic, Maria, and Ross Levine. 2005. Does Foreign Direct Investment Accelerate Economic Growth? In *Does Foreign Direct Investment Promote Economic Development?* ed. Theodore H. Moran, Edward M, Graham, and Magnus Blomström. Washington: Institute for International Economics and Center for Global Development.

Carlson, Mark, and Leonardo Hernandez. 2002. Determinants and Repercussions of the Composition of Capital Inflows. *International Finance Discussion Papers* (January). Board of Governors of the Federal Reserve System.

Charlton, Andrew, and Nicholas Davis. 2007. Does Investment Promotion Work? *B.E. Journal of Economics Analysis & Policy: Contributions* 7, no. 1: article 42.

Choe, Jong Il. 2003. Do Foreign Direct Investment and Gross Domestic Investment Promote Economic Growth? *Review of Development Economics* 7, no. 1: 44–57.

Cline, William R. 2008. Financial Globalization and Economic Welfare. Internal Peterson Institute for International Economics presentation, March 28, 2008.

De Mooij, Ruud A., and Sjef Ederveen. 2005. Explaining the Variation in Empirical Estimates of Tax Elasticities of Foreign Direct Investment. *Tinbergen Institute Discussion Paper* TI 2005-108/3. Available at <http://ideas.repec.org> (accessed April 10, 2008).

Dee, Phillipa. 2006. Multinational Corporations and Pacific Regionalism. Presentation at the PAFTAD 31 conference on Multinational Corporations and the Rise of the Network Economy in the Pacific Rim, Guadalajara, Mexico, June 10–12.

Desai, Mihir A., C. Fritz Foley, and James R. Hines, Jr. 2005. Foreign Direct Investment and the Domestic Capital Stock. *American Economic Review* 95, no.2: 33–38.

Desai, Mihir A., C. Fritz Foley, and James R. Hines, Jr. 2006. Capital Controls, Liberalizations, and Foreign Direct Investment. *Review of Financial Studies* 19, no. 4: 1434–64.

FCC (US Federal Communications Commission). 2004. Telecommunications Act of 1996. Available at [www.fcc.gov](http://www.fcc.gov) (accessed July 15, 2008).

Ferrantino, Michael J., and H. Keith Hall. 2001. *The Direct Effect of Trade Liberalization of Foreign Direct Investment: A Partial Equilibrium Analysis*. USITC Office of Economics Working Paper no. 2001-10-B. Available at <http://papers.ssrn.com> (accessed April 4, 2008).

Gastanaga, Victor M., Jeffrey b. Nugent, and Bistra Pashamova. 1998. Host Country Reforms and FDI Inflows: How Much Difference do they Make? *World Development* 26, no.7: 1299–314.

Goldar, Bishwanath and Rashmi Banga. 2007. *Impact of Trade Liberalization on Foreign Direct Investment in Indian Industries*. Asia-Pacific Research and Training Network on Trade Working Paper no. 35 (June).

Golub, Stephen S. 2003. *Measures of Restrictions on Inward Foreign Direct Investment for OECD Countries*. OECD Economic Studies no. 36, 2003/1. Paris: Organization for Economic Cooperation and Development.

Graham, Edward M., and Paul R. Krugman. 1995. *Foreign Direct Investment in the United States, 3d ed.* Washington: Institute for International Economics.

Hallward-Driemeier, Mary. 2003. *Do Bilateral Investment Treaties Attract Foreign Direct Investment? Only a Bit...and They Could Bite*. Policy Research Working Paper. Washington: World Bank.

Hardin, A., and L. Holmes. 1997. *Service Trade and Foreign Direct Investment*. Australian Productivity Commission. Available at [www.pc.gov.au](http://www.pc.gov.au) (accessed July 9, 2008).

Harding, Torfinn, and Beata Smarzynska Javorcik. 2007. *Developing Economies and International Investors: Do Investment Promotion Agencies Bring Them Together?* Policy Research Working Paper 4339. Washington: World Bank.

Haveman, Jon D., Vivian Lei, and Janet S. Netz. 2001. International Integration and Growth: A Survey and Empirical Investigation. *Review of Development Economics* 5, no. 2: 289–311.

Hufbauer, Gary Clyde, and Jeffrey J. Schott. 2007. Fitting Asia-Pacific Agreements into the WTO System. Presentation at the Institut De Hautes Etudes (HEI), Swiss State Secretariat for Economic Affairs (SECO), Swiss National Center of Competence in Research (NCCR) conference, Geneva, September 10–12.

Hultman, Charles W., and L. Randolph McGee. 1989. Factors Affecting the Foreign Banking Presence in the United States. *Journal of Banking and Finance* 13: 383–96.

Leshner, Molly, and Sebastien Miroudot. 2007. The Economic Impact of Investment Provisions in Regional Trade Agreements. *Aussenwirtschaft* 62 (Jahrgang), Heft II, Zurich: Ruegger, S. 193–232.

Hymer, Stephen H. 1976. *The International Operations of National Firms*. Cambridge, MA: MIT Press (originally Ph.D. dissertation, Massachusetts Institute of Technology, accepted 1959).

Keller, Wolfgang, and Stephen R. Yeaple. 2005. *Multinational Enterprises International Trade, and Productivity Growth: Firm-level Evidence from the United States*. Discussion Paper Series 1: Economic Studies, no 07/2005. Frankfurt: Deutsche Bundesbank.

Klemm, Alexander. 2005. *Corporate Tax Rate Data*. London: Institute for Fiscal Studies. Available at [www.ifs.org.uk](http://www.ifs.org.uk) (accessed April 14, 2008).

Loree, David W. and Stephen E. Guisinger. 1995. Policy and Non-Policy Determinants of US Equity Foreign Direct Investment. *Journal of International Business Studies* 26, no.2 (2nd quarter): 281–99.

Marchick, David M., and Matthew J. Slaughter. 2008. *Global FDI Policy: Correcting a Protectionist Drift*. CSR no. 34 (June). Council on Foreign Relations.

Montiel, Peter, and Carmen M. Reinhart. 1999. Do Capital Controls and Macroeconomic Policies Influence the Volume and Composition of Capital Flows? Evidence from the 1990s. *Journal of International Money and Finance* 18: 619–35.

Neumeyer, Eric, and Laura Spess. 2005. *Do Bilateral Investment Treaties Increase Foreign Direct Investment to Developing Countries?* London: LSE Research Online. Available at <http://eprints.lse.ac.uk> (accessed April 4, 2008).

Neumeyer, Eric. 2006. Do Double Taxation Treaties Increase Foreign Direct Investment to Developing Countries? *Journal of Development Studies* 43, no. 8: 1495–513.

Nicoletti, Giuseppe, Steve Golub, Dana Hájková, Daniel Mirza, and Kwang-Yeol Yoo. 2003. *Policies and International Integration: Influences on Trade and Foreign Direct Investment*. OECD Economics Department Working Paper no. 359. Paris: Organization for Economic Cooperation and Development.

NRC (United States Nuclear Regulatory Commission). 2004. *Fact Sheet on the Effects of Electric Utility Deregulation*. Available at [www.nrc.gov](http://www.nrc.gov) (accessed July 15, 2008).

OECD (Organization for Economic Cooperation and Development). 2008. OECD Stat Extracts, "Productivity: Multi-Factor Productivity." Paris. Available at <http://stats.oecd.org> (accessed April 16, 2008).

Sachs, Lisa, and Karl P. Sauvant. 2009. An Overview. In *The Effect of Bilateral Investment Treaties and Double Taxation Treaties on Foreign Direct Investment Flows*, ed. Lisa Sachs and Karl P. Sauvant. New York: Oxford University Press (forthcoming).

Salacuse, Jeswald W., and Nicholas P. Sullivan. 2005. Do BITs Really Work? An Evaluation of Bilateral Investment Treaties and Their Grand Bargain. 46 *Harvard International Law Journal* 67 (Winter).

Shapiro, Daniel, and Steven Globerman. 2003. Foreign Investment Policies and Capital Flows in Canada: A Sectoral Analysis. *Journal of Business Research* 56: 779–90.

Tschoegl, Adrian E. 2003. *Who Owns the Major US Subsidiaries of Foreign Banks? A Note*. Center for Financial Institutions Working Paper 03-11. Wharton School Center for Financial Institutions, University of Pennsylvania.

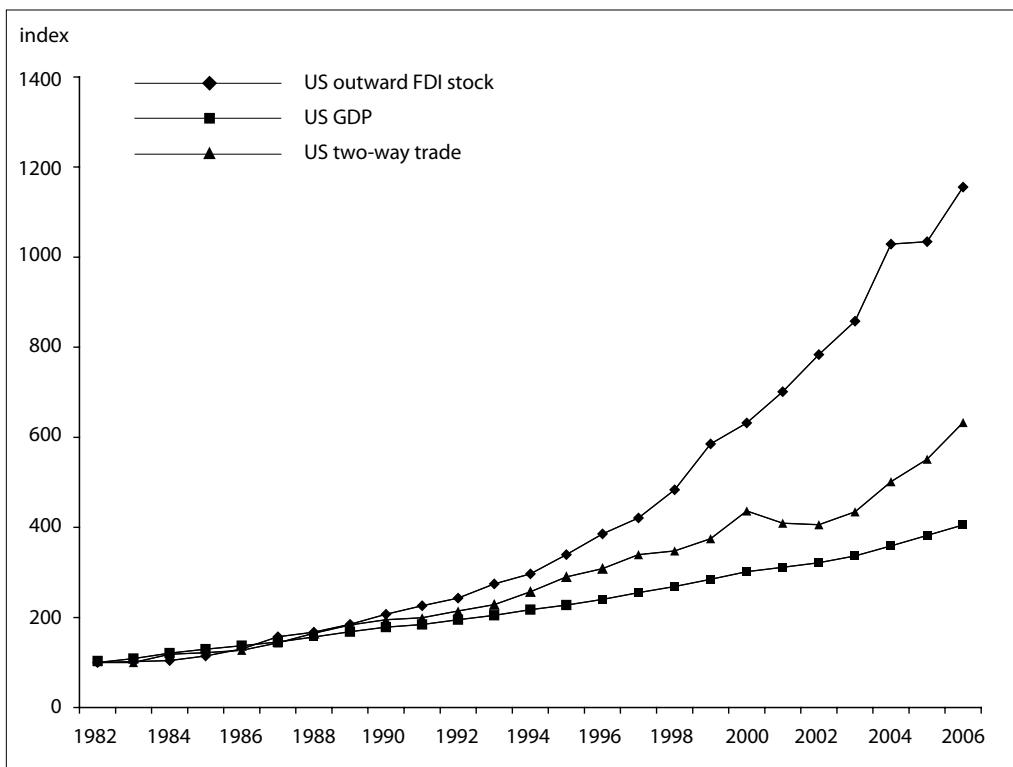
UNCTAD (United Nations Conference on Trade and Development). 2008a. FDI Statistics, "Interactive Data: Mergers and Acquisitions." Available at [www.unctad.org](http://www.unctad.org) (accessed April 16, 2008).

UNCTAD (United Nations Conference on Trade and Development). 2008b. UNCTAD's Database on Changes in National FDI Policies. Available from [thomas.pollen@unctad.org](mailto:thomas.pollen@unctad.org).

US Department of Transportation. 2005. *Regulation: From Economic Deregulation to Safety Regulation*. Federal Highway Administration, Freight Management Operations, Working Paper. Available at <http://ops.fhwa.dot.gov> (accessed July 15, 2008).

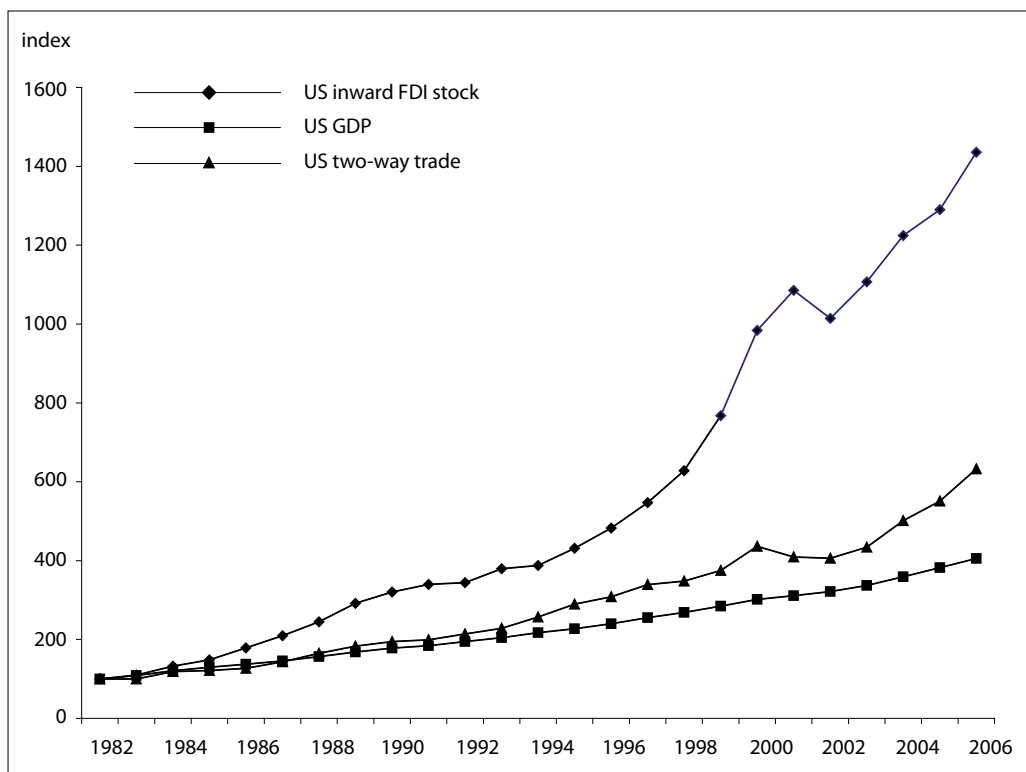
Yackee, Jason Webb. 2007. *Do BITs Really Work? Revisiting the Empirical Link Between Investment Treaties and Foreign Direct Investment*. Legal Studies Research Paper no. 1054. University of Wisconsin Law School. Available at <http://ssrn.com> (accessed April 4, 2008).

**Figure 1** Indexes of US outward FDI stock, US GDP, and US two-way trade, 1982–2006  
(1982 = 100)



Source: Bureau of Economic Analysis, 2008.

**Figure 2** Indexes of US inward FDI stock, US GDP, and US two-way trade, 1982–2006  
(1982 = 100)



Source: Bureau of Economic Analysis, 2008.

**Table 1 Statutory corporate tax rates, selected countries, 1982, 1987, 1992, 1999, 2005 (percent)**

Country	1982	1987	1992	1999	2005
Australia	50	50	39	36	30
Austria	61	61	39	34	25
Canada	45	42	38	36	36
Finland	60	50	36	28	26
France	50	45	34	40	34
Germany	62	63	59	52	38
Greece	43	44	40	40	32
Ireland	10	10	10	10	13
Italy	39	46	48	41	37
Japan	55	55	51	41	40
Netherlands	48	42	35	35	32
Norway	51	51	28	28	28
Portugal	55	46	40	37	28
Spain	33	35	35	35	35
Sweden	60	52	30	28	28
Switzerland	35	35	35	34	34
United Kingdom	52	35	33	30	30
United States	50	38	38	39	39
<i>Weighted average</i> (share of FDI inflows)	49	40	36	37	35

Notes: All figures include federal, state, and local tax rates.

Sources: Klemm (2005); UNCTAD FDI database, 2008.



**Table 2 The benefit to FDI stock from tax cuts, selected countries, 1982–2005**

5-year analysis						Yearly analysis					
Years	Average tax rate (percent)	Tax rate change (percent)	Actual inflows (billions of dollars)	Hypothetical inflows (billions of dollars)	Actual less hypothetical inflows (billions of dollars)	Year	Average tax rate (percent)	Accumulated tax rate change (percent)	Actual inflows (billions of dollars)	Hypothetical inflows (billions of dollars)	Actual less hypothetical inflows (billions of dollars)
1981–85	48.32		183			1981	48.78		44		
						1982	48.89	0.11	30	30	0
						1983	48.92	0.14	31	31	0
						1984	47.95	–0.83	39	37	1
						1985	47.06	–1.72	40	38	2
1986–90	40.44	–7.88	612	473	139	1986	46.62	–2.16	69	64	5
						1987	40.01	–8.77	112	84	27
						1988	38.97	–9.81	126	92	34
						1989	38.93	–9.85	153	112	41
						1990	37.67	–11.11	153	108	45
1991–95	36.70	–3.74	615	540	75	1991	36.76	–12.02	95	66	29
						1992	35.82	–12.96	92	62	30
						1993	36.63	–12.15	117	81	37
						1994	36.86	–11.92	125	86	38
						1995	37.44	–11.34	186	131	55
1996–2000	37.36	0.66	2,580	2,644	–65	1996	37.17	–11.62	206	144	62
						1997	37.88	–10.90	251	179	73
						1998	36.71	–12.07	453	313	140
						1999	36.60	–12.19	689	474	215
						2000	38.44	–10.34	981	709	273
2001–05	34.89	–2.47	1,976	1,810	166	2001	35.64	–13.14	475	319	156
						2002	33.86	–14.92	387	249	138
						2003	34.06	–14.73	298	193	105

*(table continues next page)*

**Table 2 The benefit to FDI stock from tax cuts, selected countries, 1982–2005** *(continued)*

5-year analysis						Yearly analysis					
Years	Average tax rate (percent)	Tax rate change (percent)	Actual inflows (billions of dollars)	Hypothetical inflows (billions of dollars)	Actual less hypothetical inflows (billions of dollars)	Year	Average tax rate (percent)	Accumulated tax rate change (percent)	Actual inflows (billions of dollars)	Hypothetical inflows (billions of dollars)	Actual less hypothetical inflows (billions of dollars)
						2004	35.88	–12.90	318	215	103
						2005	35.04	–13.74	497	329	168
Total inward FDI stock gain from tax liberalization assuming tax cuts have a five-year effect on FDI flows (billions of dollars)					315	Total inward FDI stock gain from tax liberalization assuming tax cuts have a permanent effect on FDI flows (billions of dollars)					1,778
Total inward FDI stock in 1982						\$429 billion					
Total inward FDI stock in 2005						\$5,998 billion					
Total inward FDI stock growth						\$5,569 billion					

**Table 3 US outward FDI stock by industry, 1982–2006** (current US dollars in billions)

<b>Industry</b>	<b>1982</b>	<b>1987</b>	<b>1992</b>	<b>1997</b>	<b>2001</b>	<b>2006</b>
<i>All industries total</i>	208	326	502	871	1460	2384
Petroleum related	58	61	59	84	89	143
Food	6	10	15	21	21	33
Beverages	2	3	6	12	12	35
Tobacco products	2	4	4	4	1	1
Chemicals	18	28	45	76	79	130
Machinery (nonelectrical)	14	29	28	30	18	32
Electronic and computer equipment and products	7	10	16	31	68	92
Transportation equipment	11	19	25	36	40	56
Primary and fabricated metals	5	6	10	16	22	23
Textiles and apparel	1	2	2	3	4	5
Wood and wood products	1	1	1	3	5	6
Paper	4	6	11	11	14	11
Plastics and rubber	3	5	6	10	11	14
Nonmetallic mineral products	2	3	4	6	7	14
Medical equipment	1	1	4	7	11	25
Miscellaneous manufacturing	1	1	2	3	4	6
Wholesale trade	21	34	53	65	108	161
Retail trade	4	5	9	12	23	60
Banking	10	18	25	38	56	68
Finance except banking	–9	7	32	86	182	366
Insurance	7	12	19	43	58	119
Real estate	1	2	2	1	5	8
Holding companies	20	35	83	168	449	710
Agriculture services	1	1	1	1	1	1
Mining (except oil and gas)	7	7	8	12	10	21
Utilities	0	0	1	14	26	11
Communications	0	0	4	15	13	16
Construction	1	1	1	1	2	2
Transportation	2	2	4	5	7	15
Hotels	0	1	1	3	8	9
Business services	2	3	10	29	54	91
Publishing services	1	1	2	3	7	13
Motion pictures and television services	1	1	2	3	5	17
Architecture and engineering services	0	1	1	1	3	2
Health services	0	1	0	0	0	1
Legal services	0	0	0	0	1	2
Education services	0	0	0	0	0	0
Other services	3	4	6	18	27	69

Notes: Several entries are not disclosed by the data source. We extrapolate from the overall trend to fill in missing entries.

Source: Bureau of Economic Analysis, 2008.

**Table 4 Growth calculations for US outward FDI stock by industry, 1982–2006**  
(current US dollars in billions)

<b>Industry</b>	<b>Actual, 1982</b>	<b>Predicted 2006 level (based on world GDP growth)</b>	<b>Actual, 2006</b>	<b>FDI growth, 1982– 2006</b>	<b>FDI growth explained by GDP growth</b>	<b>FDI growth not explained (total)<sup>a</sup></b>	<b>FDI growth not explained (share in percent)</b>
<i>All industries total</i>	207	964	2,389	2,183	757	1,426	65
Petroleum related	58	269	143	85	212	–126	–148
Food	6	28	33	27	22	5	20
Beverages	2	8	35	34	6	27	81
Tobacco products	2	9	1	–0	7	–7	<0
Chemicals	18	85	130	112	67	45	40
Machinery (nonelectrical)	14	65	32	18	51	–32	–50
Electronic and computer equipment and products	7	34	92	85	27	58	69
Transportation equipment	11	51	56	45	40	4	10
Primary and fabricated metals	5	25	23	18	20	–2	–13
Textiles and apparel	1	6	5	3	5	–2	–56
Wood and wood products	1	3	6	5	2	3	60
Paper	4	19	11	6	15	–9	–141
Plastics and rubber	3	16	14	10	12	–2	–17
Nonmetallic mineral products	2	9	14	12	7	5	38
Medical equipment	1	3	25	24	3	21	89
Miscellaneous manufacturing	1	4	6	5	3	2	33
Wholesale trade	21	97	161	140	76	64	46
Retail trade	4	17	60	57	14	43	76
Banking	10	48	68	57	38	19	34
Finance except banking	–9	0 <sup>b</sup>	366	375	0	375	109
Insurance	7	34	119	112	27	85	76
Real estate	1	3	8	8	2	6	74
Holding companies	20	91	710	691	72	619	90
Agriculture services	1	2	1	0	2	–1	–333
Mining (except oil and gas)	7	31	21	15	25	–10	–69

(table continues next page)

**Table 4 Growth calculations for US outward FDI stock by industry, 1982–2006**  
(current US dollars in billions) *(continued)*

<b>Industry</b>	<b>Actual, 1982</b>	<b>Predicted 2006 level (based on world GDP growth)</b>	<b>Actual, 2006</b>	<b>FDI growth, 1982– 2006</b>	<b>FDI growth explained by GDP growth</b>	<b>FDI growth not explained (total)<sup>a</sup></b>	<b>FDI growth not explained (share in percent)</b>
Utilities	0	2	11	11	2	9	84
Communications	0	1	16	16	0	16	97
Construction	1	5	2	1	4	–2	–173
Transportation	2	8	15	13	6	7	51
Hotels	0	2	9	9	2	7	80
Business services	2	9	91	89	7	82	92
Publishing services	1	2	13	12	2	10	84
Motion pictures and television services	1	3	17	16	3	14	85
Architecture and engineering services	0	2	2	2	2	0	6
Health services	0	0	1	1	0	1	73
Legal services	0	0	2	2	0	2	97
Education services	0	0	0	0	0	0	79
Other services	3	14	69	66	11	55	84

a. Negative unexplained growth could reflect market forces or tighter policy, or it could simply reflect the low responsiveness of investment in this industry to economic growth.

b. If the 1982 FDI stock was negative we arbitrarily assume that the predicted 2006 level is zero.

Sources: Bureau of Economic Analysis, 2008; International Monetary Fund, 2008; authors' calculations.

**Table 5 Restrictiveness index for FDI policies from Golub (2003)**  
(1 = most restrictive)

Type of restriction	Score
Foreign equity limits	
No foreign equity allowed	1.0
1–19 percent	0.6
20–34 percent	0.4
35–49 percent	0.3
50–74 percent	0.2
75–99 percent	0.1
No restriction but unbound	0.05
Screening and approval	
Investor must show economic benefits	0.2
Approval unless contrary to national interest	0.1
Notification (pre or post)	0.05
Other restrictions	
Board of directors/managers	
Majority must be nationals or residents	0.1
At least 1 must be national or resident	0.05
Must be locally licensed	0.025
Movement of people	
No entry	0.1
Less than one year	0.075
One to two years	0.05
Three to four years	0.025
Input and operational restrictions	
Domestic content must be more than 50 percent	0.1
Other	0.05
<i>Total—Index range<sup>a</sup></i>	Between 0 and 1

a. If foreign equity is banned, then the other criteria become irrelevant, so that the index is at 1.0. It is possible that the various scores sum to slightly more than 1.0 when foreign equity is not totally banned, and in such cases, the index is capped at 1.0.

Source: Golub (2003).

**Table 6 Average FDI restrictiveness indexes for 20 OECD countries, 0 to 1 scale**  
(1 = most restrictive)

<b>Industry</b>	<b>1981</b>	<b>1986</b>	<b>1991</b>	<b>1998</b>	<b>2005</b>	<b>1981 to 2005 change</b>
Legal business services	0.20	0.22	0.20	0.10	0.10	-0.10
Accounting business services	0.21	0.25	0.21	0.12	0.12	-0.09
Architecture business services	0.14	0.17	0.14	0.08	0.08	-0.06
Engineering business services	0.15	0.17	0.15	0.09	0.09	-0.06
<i>Total business services</i>	0.18	0.21	0.18	0.10	0.10	-0.08
Fixed telecommunications	0.82	0.90	0.82	0.34	0.20	-0.62
Mobile telecommunications	0.62	0.79	0.62	0.15	0.12	-0.50
<i>Total telecommunications</i>	0.77	0.87	0.77	0.29	0.18	-0.59
Construction	0.14	0.16	0.14	0.08	0.08	-0.06
Distribution	0.19	0.20	0.19	0.12	0.12	-0.06
Insurance	0.27	0.31	0.27	0.15	0.14	-0.13
Banking	0.30	0.45	0.30	0.13	0.13	-0.17
<i>Total finance</i>	0.29	0.42	0.29	0.14	0.13	-0.16
Tourism	0.14	0.15	0.14	0.08	0.08	-0.06
Air transportation	0.63	0.76	0.63	0.37	0.32	-0.31
Maritime transportation	0.41	0.49	0.41	0.29	0.26	-0.15
Road transportation	0.55	0.58	0.55	0.22	0.14	-0.40
<i>Total transportation</i>	0.51	0.60	0.51	0.30	0.25	-0.26
Electric utilities	0.79	0.80	0.79	0.72	0.51	-0.28
Manufacturing	0.14	0.16	0.14	0.08	0.08	-0.06

Notes: The included countries are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom. The index scores presented here are the simple averages of the individual countries' indexes for each industry.

Sources: Golub (2003); authors' calculations.

**Table 7 Policy calculations for US outward FDI stock by industry, 1982–2006**  
(current US dollars in billions)

<b>Industries</b>	<b>Actual, 1982</b>	<b>Predicted 2006 level (based on world GDP growth)</b>	<b>Actual, 2006</b>	<b>FDI growth, 1982– 2006</b>	<b>FDI growth Explained by GDP growth</b>	<b>FDI growth not explained by GDP growth (total)<sup>a</sup></b>	<b>FDI growth not explained by GDP growth (share in percent)</b>
<i>All industries total</i>	207	964	2,389	2,183	757	1,426	65
Banking	10	48	68	57	38	19	34
Finance except banking	–9	0 <sup>b</sup>	366	375	0	375	109
Insurance	7	34	119	112	27	85	76
Utilities	0	2	11	11	2	9	84
Communications	0	1	16	16	0	16	97
Transportation	2	8	15	13	6	7	51
<i>Subtotal —Positively policy affected industries</i>	11	93	595	584	73	511	88
Petroleum related	58	269	143	85	212	–126	–148
<i>Subtotal —Negatively policy affected industries</i>	58	269	143	85	212	–126	–148
<i>Total —Policy affected industries</i>	68	362	738	670	285	385	58
Share of unexplained FDI growth attributed to FDI growth in policy affected sectors <sup>c</sup>							27

**Addenda:**

	<b>In dollar terms</b>	<b>Share of total FDI growth (percent)</b>
FDI growth explained by world GDP growth	757	35
FDI growth explained by policy liberalization <sup>c</sup>	385	18
FDI growth explained by “everything else”	1,041	48

a. Negative unexplained growth could reflect market forces or tighter policy, or it could simply reflect the low responsiveness of investment in this industry to economic growth.

b. If the 1982 FDI stock was negative we would expect the 2006 level to be zero in 2006, not a larger negative amount.

c. The two numbers differ because one is the policy share of total unexplained FDI growth (namely 27 percent), while the other is the policy share of all FDI growth over the period 1982–2006 (namely 18 percent).

Sources: Bureau of Economic Analysis, 2008; International Monetary Fund, 2008; authors’ calculations.



**Table 8 US inward FDI stock by industry, 1982–2006** (current US dollars in billions)

<b>Industry</b>	<b>1982</b>	<b>1987</b>	<b>1992</b>	<b>1997</b>	<b>2001</b>	<b>2006</b>
<i>All industries total</i>	124	260	428	680	1349	1785
Petroleum related	18	40	38	36	102	121
Food	3	6	17	16	19	22
Beverages	4	9	7	13	8	13
Tobacco products	0	0	0	–1	2	4
Chemicals	14	26	52	90	129	183
Machinery (nonelectrical)	2	2	8	17	43	60
Electronic and computer equipment and products	6	12	20	36	108	69
Transportation equipment	2	3	5	18	62	69
Primary and fabricated metals	5	8	12	17	20	34
Textiles and apparel	0	1	3	3	3	3
Wood and wood products	0	1	1	1	2	3
Paper	1	2	3	5	11	9
Plastics and rubber	0	2	5	9	13	16
Nonmetallic mineral products	2	7	8	15	28	48
Medical equipment	0	2	3	11	3	41
Miscellaneous manufacturing	1	4	5	2	6	5
Wholesale trade	18	37	60	78	116	185
Retail trade	5	8	11	16	23	33
Banking	8	14	22	40	67	149
Finance except banking	0	4	10	35	69	100
Insurance	9	18	35	69	105	158
Real estate	12	22	32	40	44	43
Holding companies	2	3	4	10	72	81
Agriculture services	1	1	1	2	3	2
Mining (except oil and gas)	2	6	9	14	11	9
Utilities	0	1	3	2	26	47
Communications	0	0	1	6	56	43
Construction	4	1	2	3	7	10
Transportation	1	2	3	9	17	17
Hotels	0	2	12	11	24	25
Business services	1	5	8	12	73	108
Publishing services	2	5	10	24	20	28
Motion pictures and television services	0	1	11	11	43	21
Architecture and engineering services	0	3	1	1	2	8
Health services	0	0	1	6	5	9
Legal services	0	0	0	0	0	0
Education services	0	0	0	0	0	0
Other services	0	1	3	4	7	8

Notes: Several entries are not disclosed by the data source. We extrapolate from the overall trend to fill in missing entries.

Source: Bureau of Economic Analysis, 2008.

**Table 9 Growth calculations for US inward FDI stock by industry, 1982–2006**  
(current US dollars in billions)

<b>Industry</b>	<b>Actual, 1982</b>	<b>Predicted 2006 level (based on US GDP growth)</b>	<b>Actual, 2006</b>	<b>FDI growth, 1982– 2006</b>	<b>FDI growth explained by GDP growth</b>	<b>FDI growth not explained (total)<sup>a</sup></b>	<b>FDI growth not explained (share in percent)</b>
<i>All industries total</i>	124	504	1,785	1,660	380	1,281	77
Petroleum related	18	72	121	103	54	50	48
Food	3	12	22	19	9	10	52
Beverages	4	17	13	9	13	–4	–45
Tobacco products	0	0	4	4	0	4	100
Chemicals	14	58	183	169	44	125	74
Machinery (nonelectrical)	2	9	60	58	7	51	89
Electronic and computer equipment and products	6	23	69	64	18	46	72
Transportation equipment	2	6	69	68	5	63	93
Primary and fabricated metals	5	21	34	29	16	13	46
Textiles and apparel	0	1	3	2	1	1	56
Wood and wood products	0	1	3	3	1	2	77
Paper	1	6	9	8	5	3	43
Plastics and rubber	0	2	16	16	1	14	91
Nonmetallic mineral products	2	9	48	46	7	39	85
Medical equipment	0	0	41	41	0	41	100
Miscellaneous manufacturing	1	4	5	4	3	1	33
Wholesale trade	18	71	185	167	54	113	68
Retail trade	5	21	33	28	16	12	43
Banking	8	32	149	141	24	117	83
Finance except banking	0	2	100	100	1	98	99
Insurance	9	35	158	149	26	123	82
Real estate	12	47	43	32	35	–3	–11
Holding companies	2	7	81	79	5	73	93
Agriculture services	1	4	2	1	3	–2	–156
Mining (except oil and gas)	2	8	9	7	6	1	17
Utilities	0	0	47	47	0	47	100
Communications	0	1	43	42	1	41	98
Construction	4	15	10	7	11	–5	–71
Transportation	1	4	17	16	3	13	80
Hotels	0	2	25	24	1	23	94
Business services	1	3	108	108	3	105	98

(table continues next page)

**Table 9 Growth calculations for US inward FDI stock by industry, 1982–2006**  
(current US dollars in billions) (*continued*)

<b>Industry</b>	<b>Actual, 1982</b>	<b>Predicted 2006 level (based on US GDP growth)</b>	<b>Actual, 2006</b>	<b>FDI growth, 1982– 2006</b>	<b>FDI growth explained by GDP growth</b>	<b>FDI growth not explained (total)<sup>a</sup></b>	<b>FDI growth not explained (share in percent)</b>
Publishing services	2	7	28	26	5	21	80
Motion pictures and television services	0	1	21	21	1	20	97
Architecture and engineering services	0	1	8	8	0	8	94
Health services	0	0	9	9	0	8	97
Legal services	0	0	0	0	0	0	100
Education services	0	0	0	0	0	0	100
Other services	0	1	8	7	1	6	86

a. Negative unexplained growth could reflect market forces or tighter policy, or it could simply reflect the low responsiveness of investment in this industry to economic growth.

Sources: Bureau of Economic Analysis, 2008; International Monetary Fund, 2008; authors' calculations.

**Table 10 Policy calculations for US inward FDI stock by industry, 1982–2006**  
(current US dollars in billions)

<b>Industry</b>	<b>Actual, 1982</b>	<b>Predicted 2006 level (based on US GDP growth)</b>	<b>Actual, 2006</b>	<b>FDI growth, 1982– 2006</b>	<b>FDI growth explained by GDP growth</b>	<b>FDI growth not explained by GDP growth (total)</b>	<b>FDI growth not explained by GDP growth (share in percent)</b>
<i>All industries total</i>	124	504	1,785	1,660	380	1,281	77
Transportation equipment	2	6	69	68	5	63	93
Banking	8	32	149	141	24	117	83
Finance except banking	0	2	100	100	1	98	99
Insurance	9	35	158	149	26	123	82
Utilities	0	0	47	47	0	47	100
Communications	0	1	43	42	1	41	98
Transportation	1	4	17	16	3	13	80
<i>Subtotal—Positively policy affected industries</i>	20	80	582	562	60	502	89
<i>Total—Policy affected industries</i>	20	80	582	562	60	502	89
Share of unexplained FDI growth attributed to FDI growth in policy affected sectors <sup>a</sup>							39

**Addenda:**

	<b>In dollar terms</b>	<b>Share of total FDI growth (percent)</b>
FDI growth explained by US GDP growth	380	23
FDI growth explained by policy liberalization <sup>a</sup>	502	30
FDI growth explained by “everything else”	779	47

a. The two numbers differ because one is the policy share of total unexplained FDI growth (namely 39 percent), while the other is the policy share of all FDI growth over the period 1982–2006 (namely 30 percent).

Sources: Bureau of Economic Analysis, 2008; International Monetary Fund, 2008; authors’ calculations.

**Table 11 Policy calculations for US outward and inward FDI stock by industry, 1982–2006  
(five-year averages)**

<b>Category</b>	<b>1982–86 to 1987–91</b>	<b>1987–91 to 1992–96</b>	<b>1992–96 to 1997–2001</b>	<b>1997–2001 to 2002–06</b>
US outward FDI				
FDI growth in policy affected sectors (billions of US dollars)	–22	35	150	113
Share of unexplained FDI growth attributed to FDI growth in policy affected sectors (percent)	n.a. <sup>a</sup>	47	31	26
US inward FDI				
FDI growth in policy affected sectors (billions of US dollars)	19	38	135	108
Share of unexplained FDI growth attributed to FDI growth in policy affected sectors (percent)	16	79	40	44

a. After allowing for world GDP growth, the outward FDI stock in our identified policy affected sectors was less than expected.

Source: Authors' calculations.

**Table 12 US outward FDI stock by destination, 1982–2006** (current US dollars in billions)

<b>Country</b>	<b>1982</b>	<b>1987</b>	<b>1992</b>	<b>1997</b>	<b>2001</b>	<b>2006</b>
<i>All countries total</i>	208	326	502	871	1,460	2,384
Argentina	3	3	3	11	16	13
Australia	9	12	17	28	28	123
Austria	1	1	1	3	4	17
Bahamas	3	4	4	2	6	26
Barbados	0	0	0	1	2	5
Belgium	6	8	11	17	23	52
Bermuda	12	19	27	38	85	108
Brazil	9	11	16	36	32	33
Canada	44	59	69	97	153	246
Chile	0	1	3	9	11	10
China	0	0	1	5	12	22
Costa Rica	0	0	0	2	2	2
Czech Republic	0	0	0	0	1	3
Denmark	1	1	2	2	5	6
Egypt	1	2	1	2	3	6
Finland	0	0	0	1	2	3
France	7	12	25	37	40	66
Germany	15	25	33	41	63	99
Hong Kong	3	5	9	17	32	38
Hungary	0	0	0	1	2	4
India	0	0	0	2	2	9
Indonesia	2	3	4	7	11	11
Ireland	2	6	8	11	40	84
Israel	1	1	1	2	6	10
Italy	4	10	13	16	23	29
Japan	6	16	27	34	56	92
Korea	1	1	3	6	10	22
Luxembourg	1	1	2	10	51	83
Malaysia	1	1	2	7	7	12
Mexico	5	5	14	24	53	85
Netherlands	7	16	21	69	148	216
Netherlands Antilles	–20	–13	–2	4	6	4
New Zealand	1	1	3	7	4	6
Panama	4	6	11	22	5	6
Peru	2	1	1	2	3	5

*(table continues next page)*

**Table 12 US outward FDI stock by destination, 1982–2006** (current US dollars in billions)  
(continued)

Country	1982	1987	1992	1997	2001	2006
Philippines	1	1	2	3	5	7
Poland	0	0	0	1	5	7
Portugal	0	1	1	1	3	3
Russia	0	0	0	1	1	10
Saudi Arabia	1	2	2	4	4	4
Singapore	2	3	7	18	41	60
South Africa	2	1	1	2	3	4
Spain	2	4	9	12	28	49
Sweden	1	1	2	4	26	36
Switzerland	13	20	29	31	64	90
Taiwan	1	2	3	5	9	16
Thailand	1	1	3	4	6	8
Trinidad and Tobago	1	0	1	1	2	4
Turkey	0	0	1	1	2	2
United Arab Emirates	1	1	0	1	1	5
United Kingdom	28	46	85	154	228	364
United Kingdom Islands	1	5	5	14	36	81
Venezuela	3	2	2	5	10	12
Other Africa	3	3	3	7	10	16
Other Asia and Pacific	2	2	2	2	3	5
Other Caribbean	1	0	2	3	5	3
Other Central America	1	1	1	2	2	2
Other Europe	4	4	5	11	15	28
Other Middle East	3	2	3	4	3	8
Other South America	4	4	4	5	5	6

Note: Entries for years with undisclosed data are extrapolated from the surrounding years.

Source: Bureau of Economic Analysis, 2008.

**Table 13 Growth calculations for US outward FDI by destination, 1982–2006**  
(current US dollars in billions)

Country	FDI, 1982	Predicted FDI, 2006	FDI, 2006	FDI growth	GDP explained	GDP not explained	GDP not explained (percent)
<i>All countries total</i>	208	968	2,384	2,176	761	1,416	65
Argentina	3	7	13	10	4	6	57
Australia	9	37	123	113	28	85	75
Austria	1	3	17	17	2	15	88
Barbados	0	0	5	5	0	5	97
Belgium	6	25	52	47	19	27	59
Brazil	9	50	33	23	40	–17	–73
Canada	44	180	246	203	137	66	33
Chile	0	2	10	10	2	8	84
China	0	0	22	22	0	22	98
Costa Rica	0	1	2	1	1	0	28
Czech Republic	0	0	3	3	0	3	100
Denmark	1	5	6	5	4	0	8
Egypt	1	5	6	5	3	1	29
Finland	0	1	3	2	1	2	78
France	7	29	66	59	22	37	63
Germany	15	67	99	84	52	32	38
Hong Kong	3	17	38	35	14	21	60
Hungary	0	0	4	4	0	4	100
India	0	2	9	8	1	7	85
Indonesia	2	8	11	8	5	3	35
Ireland	2	21	84	82	19	63	77
Israel	1	3	10	9	2	7	74
Italy	4	19	29	25	15	10	39
Japan	6	26	92	85	19	66	77
Korea	1	8	22	22	7	14	66
Luxembourg	1	10	83	81	9	73	89
Malaysia	1	7	12	11	5	6	52
Mexico	5	22	85	80	17	63	79
Netherlands	7	31	216	209	25	184	88
New Zealand	1	3	6	5	2	3	55
Panama	4	16	6	1	11	–10	–769
Peru	2	7	5	3	5	–2	–83

(table continues next page)



**Table 13 Growth calculations for US outward FDI by destination, 1982–2006**  
(current US dollars in billions) (*continued*)

Country	FDI, 1982	Predicted FDI, 2006	FDI, 2006	FDI growth	GDP explained	GDP not explained	GDP not explained (percent)
Philippines	1	4	7	6	3	3	50
Poland	0	0	7	7	0	7	100
Portugal	0	2	3	3	2	1	43
Russia**	0	0	10	10	0	10	100
Saudi Arabia	1	3	4	3	2	1	33
Singapore	2	15	60	59	13	46	78
South Africa	2	8	4	2	5	–4	–250
Spain	2	15	49	47	13	34	73
Sweden	1	4	36	35	3	32	92
Switzerland	13	48	90	77	35	42	54
Taiwan	1	4	16	16	3	12	78
Thailand	1	4	8	7	4	4	51
Trinidad and Tobago	1	2	4	3	1	2	61
Turkey	0	1	2	2	1	1	61
United Arab Emirates	1	3	5	4	2	2	45
United Kingdom	28	136	364	337	108	228	68
Venezuela	3	6	12	9	3	6	63
Bahamas	3	11	26	23	8	15	64
Bermuda*	12	54	108	97	42	55	56
Netherlands Antilles*	–20	0	4	24	0	24	100
United Kingdom Islands*	1	7	81	79	5	74	93
Other Africa*	3	14	16	13	11	2	15
Other Asia and Pacific*	2	11	5	5	8	–3	–69
Other Caribbean*	1	4	3	2	3	–1	–91
Other Central America*	1	5	2	1	4	–2	–146
Other Europe*	4	17	28	24	13	11	44
Other Middle East*	3	14	8	7	11	–4	–63
Other South America*	4	20	6	4	16	–12	–313

\*GDP growth of the world except the United States is used for this country.

\*\* Russian GDP from 1982 to 1991 is extrapolated from Polish GDP growth over the same time period.

Sources: Bureau of Economic Analysis, 2008; International Monetary Fund, 2008; authors' calculations.

**Table 14 Policy calculations for US outward FDI by destination, 1982–2006**  
(current US dollars in billions)

Country	Actual, 1982	Predicted 2006 level (based on country GDP growth)	Actual, 2006	FDI growth, 1982– 2006	FDI growth explained by GDP growth	FDI growth not explained by GDP growth (total)	FDI growth not explained by GDP growth (share in percent)
<i>All countries total</i>	208	968	2,384	2,176	761	1,416	65
Argentina	3	7	13	10	4	6	57
Bahamas	3	11	26	23	8	15	64
Bermuda <sup>a</sup>	12	54	108	97	42	55	56
Chile	0	2	10	10	2	8	84
China	0	0	22	22	0	22	98
Costa Rica	0	1	2	1	1	0	28
Czech Republic	0	0	3	3	0	3	100
Egypt	1	5	6	5	3	1	29
Hungary	0	0	4	4	0	4	100
India	0	2	9	8	1	7	85
Indonesia	2	8	11	8	5	3	35
Ireland	2	21	84	82	19	63	77
Japan	6	26	92	85	19	66	77
Korea	1	8	22	22	7	14	66
Malaysia	1	7	12	11	5	6	52
Mexico	5	22	85	80	17	63	79
Netherlands Antilles <sup>a</sup>	–20	0	4	24	0	24	100
Poland	0	0	7	7	0	7	100
Russia <sup>b</sup>	0	0	10	10	0	10	100
Thailand	1	4	8	7	4	4	51
Turkey	0	1	2	2	1	1	61
United Kingdom Islands <sup>a</sup>	1	7	81	79	5	74	93
<i>Subtotal—Positively policy affected countries</i>	20	185	621	601	146	456	76
Brazil	9	50	33	23	40	–17	–73
Peru	2	7	5	3	5	–2	–83
Other Central America <sup>a,c</sup>	1	5	2	1	4	–2	–146
<i>Subtotal—Negatively policy affected countries</i>	12	62	40	28	49	–22	–78
<i>Total—Policy affected countries</i>	32	247	661	629	195	434	69
Share of unexplained FDI growth attributed to FDI growth in policy affected countries <sup>d</sup>							31

(table continues next page)

**Table 14 Policy calculations for US outward FDI by destination, 1982–2006**  
(current US dollars in billions) (*continued*)

<b>Addenda:</b>		
	<b>In dollar terms</b>	<b>Share of total FDI growth (percent)</b>
FDI growth explained by country-specific GDP growth	761	35
FDI growth explained by policy liberalization <sup>d</sup>	434	20
FDI growth explained by “everything else”	981	45

a. GDP growth of the world except the United States is used for this country.

b. Russian GDP from 1982 to 1991 is extrapolated from Polish GDP growth over the same time period.

c. “Other” refers to Central American countries not listed in table 11.

d. See note “c” in table 7 and note “a” in table 10.

Sources: Bureau of Economic Analysis, 2008; International Monetary Fund, 2008; authors’ calculations.

**Table 15 FDI restrictiveness index from Agosin and Machado (2007)** (5 = most open, 0 = least open)

Country	1990	1996	2002	Country	1990	1996	2002
Algeria	3	3	3	Latvia	—	3	4
Angola	1	2	2	Lebanon	5	5	5
Argentina	3	5	4	Lesotho	3	3	5
Armenia	—	5	5	Lithuania	—	2	4
Australia	2	2	1	Madagascar	3	4	5
Austria	3	4	3	Malaysia	0	1	2
Azerbaijan	—	5	5	Mauritius	4	5	5
Bangladesh	2	1	3	Mexico	1	1	1
Belarus	—	2	2	Moldova	—	3	4
Belgium	4	4	5	Mongolia	—	5	5
Benin	0	0	0	Mozambique	4	3	3
Bolivia	3	5	5	Namibia	—	4	4
Brazil	0	3	2	Nepal	1	1	1
Bulgaria	—	4	4	Netherlands	5	5	5
Burkina Faso	1	0	5	New Zealand	3	4	2
Cambodia	0	3	4	Nicaragua	4	4	5
Cameroon	1	3	4	Nigeria	2	2	4
Canada	3	3	3	Norway	4	5	5
Central African Republic	3	3	3	Pakistan	1	3	4
Chad	1	2	4	Panama	5	5	5
Chile	3	3	3	Paraguay	5	5	5
China	1	2	2	Peru	2	5	5
Colombia	0	3	3	Philippines	2	5	5
Congo	2	3	4	Poland	2	3	4
Costa Rica	4	5	5	Portugal	1	4	4
Cote d'Ivoire	2	3	5	Romania	1	5	5
Croatia	—	2	5	Russia	—	2	3
Czech Republic	—	5	4	Senegal	3	3	4
Denmark	5	5	5	Singapore	5	5	5
Dominican Republic	4	3	4	Slovakia	—	4	4
Ecuador	1	4	4	Slovenia	—	1	4
Egypt	2	3	4	South Africa	4	5	5
El Salvador	3	4	3	Spain	2	3	4
Estonia	—	5	4	Sri Lanka	2	3	4
Ethiopia	0	2	2	Sweden	5	5	5
Finland	4	4	5	Switzerland	0	5	5
France	2	4	4	Syria	3	4	5

*(table continues next page)*

**Table 15 FDI restrictiveness index from Agosin and Machado (2007)** (5 = most open, 0 = least open)  
(continued)

Country	1990	1996	2002	Country	1990	1996	2002
Gabon	1	2	3	Tajikistan	—	5	5
Germany	5	5	5	Thailand	3	5	5
Ghana	0	1	2	Togo	3	4	4
Greece	2	3	3	Trinidad and Tobago	3	4	4
Guatemala	3	4	4	Tunisia	3	3	4
Guinea	2	4	4	Turkey	2	2	4
Haiti	4	3	4	Turkmenistan	—	2	2
Honduras	3	3	4	Uganda	0	4	5
Hong Kong	4	5	5	Ukraine	0	4	3
Hungary	1	3	5	United Kingdom	5	4	4
India	0	0	0	United States	5	4	3
Indonesia	0	1	2	Uruguay	3	5	5
Ireland	3	4	4	Uzbekistan	—	4	4
Israel	4	4	5	Venezuela	2	4	3
Italy	5	5	5	Vietnam	3	2	4
Jamaica	3	5	5	Yemen	3	5	4
Japan	2	2	3	Zambia	2	5	5
Kenya	3	5	4	Zimbabwe	1	1	1
Korea	1	1	4				

— = missing data.

Source: Agosin and Machado (2007).

**Table 16 UNCTAD database of “more” or “less” favorable FDI policy changes, 1992–2006**

Country	More	Less	Net	Country	More	Less	Net	Country	More	Less	Net
Afghanistan	1	0	1	Cape Verde	3	0	3	Gambia	0	1	–1
Albania	16	0	16	Cayman Islands	3	0	3	Georgia	10	1	9
Algeria	19	2	17	Central African Republic	1	1	0	Germany	9	5	4
Angola	5	3	2	Chile	8	8	0	Ghana	11	1	10
Anguilla	0	1	–1	China	148	10	138	Greece	23	0	23
Antigua and Barbuda	3	1	2	Colombia	22	0	22	Guam	2	0	2
Argentina	18	12	6	Comoros	1	0	1	Guatemala	7	1	6
Armenia	9	0	9	Congo	6	0	6	Guinea	3	0	3
Australia	25	1	24	Congo, DR	1	0	1	Guyana	1	0	1
Austria	12	0	12	Cook Islands	1	0	1	Honduras	5	0	5
Azerbaijan	18	2	16	Costa Rica	6	0	6	Hong Kong	6	0	6
Bahamas	6	2	4	Côte d’Ivoire	1	0	1	Hungary	31	3	28
Bahrain	16	0	16	Croatia	15	1	14	Iceland	2	0	2
Bangladesh	3	0	3	Cuba	2	2	0	India	60	1	59
Barbados	9	0	9	Cyprus	1	1	0	Indonesia	35	4	31
Belarus	14	2	12	Czech Republic	38	0	38	Iran	21	1	20
Belgium	12	0	12	Denmark	6	2	4	Iraq	6	0	6
Belize	7	0	7	Djibouti	3	1	2	Ireland	14	1	13
Benin	0	1	–1	Dominican Republic	4	1	3	Israel	17	2	15
Bolivia	3	3	0	Ecuador	18	3	15	Italy	15	1	14
Bosnia and Herzegovina	5	1	4	Egypt	39	5	34	Jamaica	3	0	3
Botswana	8	1	7	El Salvador	3	0	3	Japan	15	1	14
Brazil	16	3	13	Equatorial Guinea	0	2	–2	Jordan	31	0	31
Brunei Darussalam	1	0	1	Eritrea	5	3	2	Kazakhstan	13	4	9
Bulgaria	36	1	35	Estonia	12	2	10	Kenya	17	2	15
Burkina Faso	6	0	6	Ethiopia	20	0	20	Korea, North	13	0	13
Burundi	6	0	6	Fiji	3	0	3	Korea, South	39	2	37
Cambodia	5	1	4	Finland	15	0	15	Kuwait	14	0	14
Cameroon	3	0	3	France	20	3	17	Kyrgyzstan	2	1	1
Canada	25	0	25	Gabon	5	0	5	Laos	5	0	5

*(table continues next page)*

**Table 16 UNCTAD database of “more” or “less” favorable FDI policy changes, 1992–2006** *(continued)*

Country	More	Less	Net	Country	More	Less	Net	Country	More	Less	Net
Latvia	14	2	12	Pakistan	19	1	18	Suriname	1	0	1
Lebanon	9	0	9	Panama	11	1	10	Sweden	5	0	5
Liberia	0	1	-1	Papua New Guinea	3	0	3	Switzerland	4	1	3
Libya	7	2	5	Paraguay	2	0	2	Syria	13	1	12
Lithuania	11	2	9	Peru	19	3	16	Taiwan	33	2	31
Luxembourg	3	0	3	Philippines	33	3	30	Tajikistan	2	1	1
Macedonia	3	0	3	Poland	32	7	25	Tanzania	10	0	10
Madagascar	6	0	6	Portugal	26	1	25	Thailand	29	3	26
Malawi	3	1	2	Puerto Rico	1	0	1	Timor-Leste	1	0	1
Malaysia	35	0	35	Qatar	10	1	9	Trinidad and Tobago	1	0	1
Mali	7	0	7	Romania	34	4	30	Tunisia	19	0	19
Malta	7	0	7	Russia	47	8	39	Turkey	51	4	47
Mauritania	7	1	6	Rwanda	1	0	1	Turkmenistan	4	0	4
Mauritius	21	1	20	Saint Kitts and Nevis	6	0	6	Uganda	5	0	5
Mexico	20	0	20	Saint Lucia	2	0	2	Ukraine	27	2	25
Moldova	12	3	9	Saint Vincent	1	0	1	United Arab Emirates	15	1	14
Mongolia	6	3	3	Samoa	2	0	2	United Kingdom	6	2	4
Morocco	21	0	21	São Tome and Principe	1	0	1	United States	8	1	7
Mozambique	7	1	6	Saudi Arabia	26	3	23	Uruguay	12	2	10
Myanmar	1	0	1	Senegal	5	0	5	Uzbekistan	29	0	29
Namibia	3	0	3	Serbia and Montenegro	20	0	20	Vanuatu	2	0	2
Nepal	3	0	3	Seychelles	12	3	9	Venezuela	17	10	7
Netherlands	13	0	13	Sierra Leone	4	0	4	Vietnam	54	4	50
New Zealand	9	2	7	Singapore	27	2	25	Yemen	4	0	4
Nicaragua	8	1	7	Slovakia	14	5	9	Yugoslavia (former)	14	1	13
Niger	4	0	4	Slovenia	10	0	10	Zambia	2	1	1
Nigeria	16	2	14	South Africa	26	3	23	Zimbabwe	3	3	0
Norway	5	0	5	Spain	12	0	12	World	2,218	224	1,994
Oceania	13	0	13	Sri Lanka	6	1	5				
Oman	16	1	15	Sudan	4	0	4				

Source: UNCTAD (2008b).

**Table 17 Policy calculations for US outward FDI stock by country and by industry, 1982–2006  
(five-year averages)**

<b>Analysis</b>	<b>1982–86 to 1987–91</b>	<b>1987–91 to 1992–96</b>	<b>1992–96 to 1997–2001</b>	<b>1997–2001 to 2002–06</b>
Country analysis				
FDI growth in policy affected sectors (billions of current US dollars)	–10	30	134	123
Share of unexplained FDI growth attributed to FDI growth in policy affected sectors (percent)	n.a. <sup>a</sup>	42	27	29
Industry analysis				
FDI growth in policy affected sectors (billions of current US dollars)	–22	35	150	113
Share of unexplained FDI growth attributed to FDI growth in policy affected sectors (percent)	n.a. <sup>a</sup>	47	31	26

a. After allowing for world or country-specific GDP growth, the outward FDI stock in our identified policy affected sectors or countries was less than expected.

Source: Authors' calculations.



**Table 18 Impact of US outward FDI on US economic growth, 1982–2006**

<b>Year</b>	<b>US income receipts from FDI</b> (billions of current US dollars)	<b>Share of nominal GDP</b> (percent)	<b>1-year T-bill rate annualized</b> (percent)	<b>US outward FDI stock</b> (billions of current US dollars)	<b>Forgone return</b> (billions of current US dollars)	<b>Net US income receipts</b> (billions of current US dollars)
1982	29	0.91	12.27	208	25	4
1983	32	0.90	9.58	212	20	11
1984	35	0.90	10.91	218	24	12
1985	35	0.84	8.42	238	20	15
1986	37	0.83	6.45	270	17	19
1987	46	0.98	6.77	326	22	24
1988	58	1.15	7.65	347	27	32
1989	62	1.13	8.53	382	33	29
1990	66	1.14	7.89	431	34	32
1991	59	0.98	5.86	468	27	31
1992	58	0.91	3.89	502	20	38
1993	67	1.01	3.43	564	19	48
1994	77	1.09	5.32	613	33	45
1995	95	1.29	5.94	699	42	54
1996	103	1.31	5.52	795	44	59
1997	115	1.39	5.63	871	49	66
1998	104	1.19	5.05	1,001	51	53
1999	132	1.42	5.08	1,216	62	70
2000	152	1.55	6.11	1,316	80	71
2001	129	1.27	3.49	1,460	51	78
2002	146	1.39	2.00	1,617	32	113
2003	186	1.70	1.24	1,770	22	164
2004	239	2.05	1.89	2,125	40	199
2005	269	2.17	3.62	2,135	77	192
2006	310	2.35	4.94	2,384	118	192
<b>Addenda:</b>						
	<b>Total growth of net income receipts</b> (billions of current US dollars)	<b>Share attributable to policy liberalization</b> (percent)	<b>Benefit of FDI policy liberalization</b> (billions of current US dollars)			
1982–2006	188	18	33			

Sources: Bureau of Economic Analysis, 2008; Federal Reserve Board of Governors, 2008

**Table 19 Summary table**

	<b>Attributable to GDP growth<sup>a</sup></b>	<b>Attributable to policy liberalization</b>	<b>Attributable to “market forces plus technology”</b>	<b>Total gains</b>
a. Parsing the growth in US inward and outward FDI stock, 1982–2006 (billions of dollars)				
Total inward FDI stock gain	380	502	779	1,660
(share of total gain in parentheses)	(23)	(30)	(47)	(100)
Total outward FDI stock gain	757	385	1,041	2,183
(share of total gain in parentheses)	(35)	(18)	(48)	(100)
b. Annual gain to US GDP in 2006 from US inward and outward FDI stock growth, 1982–2006 (billions of dollars)				
Gain from inward stock growth <sup>b</sup>	11	14	22	46
Gain from outward stock growth <sup>c</sup>	66	34	90	188
Total gain to US GDP	77	48	112	234

a. When considering inward stock growth US GDP growth is used; when considering outward stock growth the GDP growth of the world except the United States is used.

b. Estimates made using the Keller and Yeaple (2005) approach.

c. Estimates drawn from direct investment income receipts of US-based multinational enterprises.

Source: Authors' calculations.